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FEBRUARY • 1961

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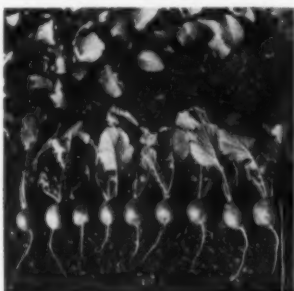
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# American Vegetable Grower



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Commercial Vegetable Grower  
Market Growers Journal

**VOL. 9**

**No. 2**

**FEBRUARY, 1961**

Cover photograph is a typical view of the vast greenhouse industry concentrated in the Cleveland, Ohio, area. More than 400 acres are under glass. An average of 35 million pounds of tomatoes are produced here annually.

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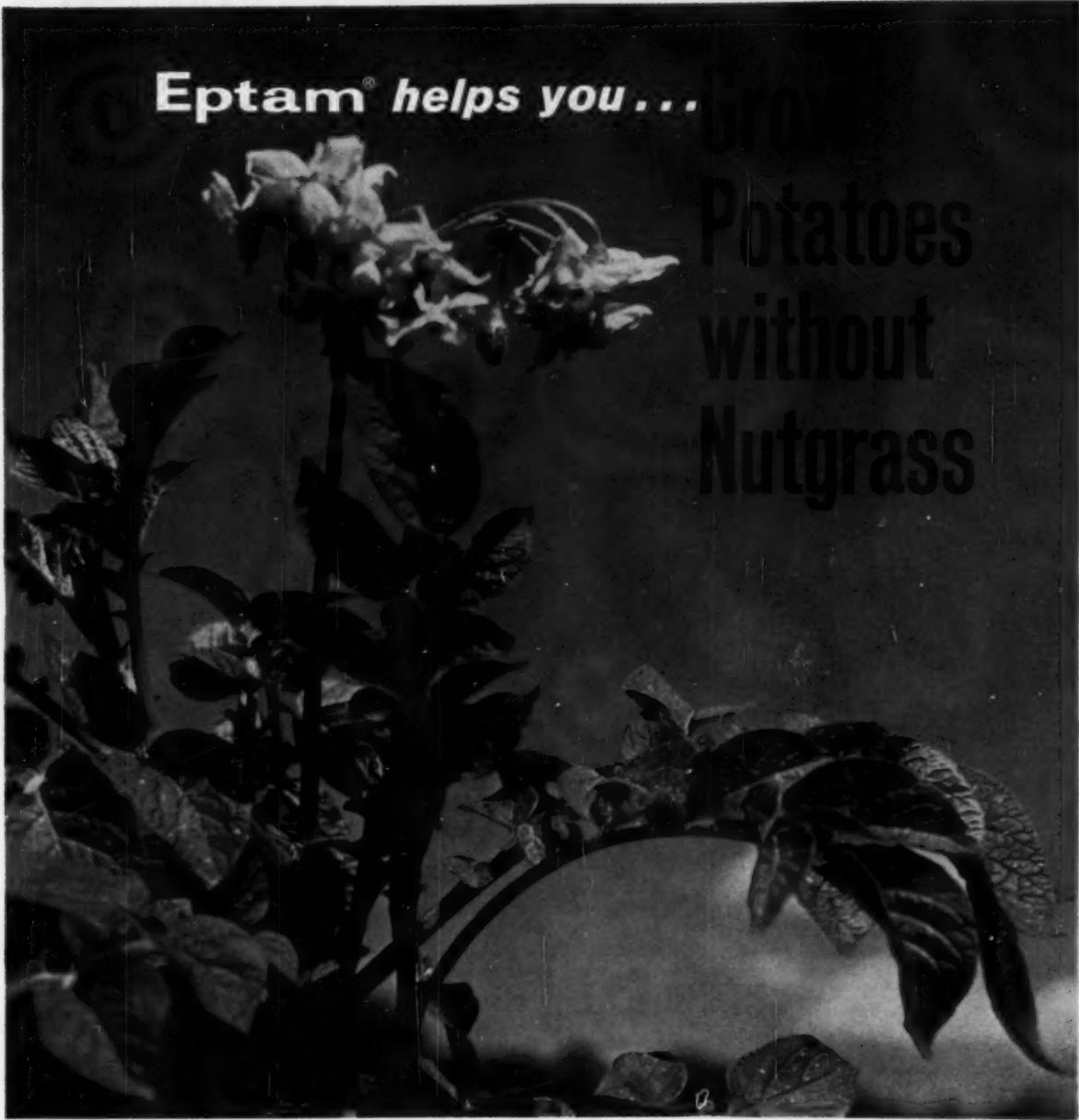
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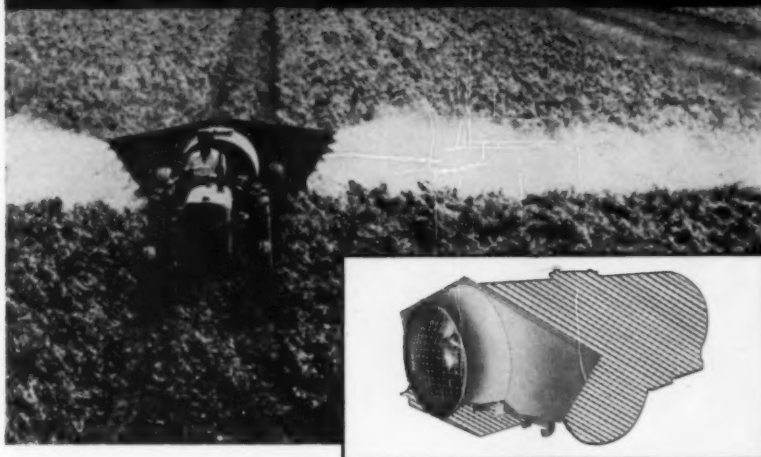
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## LETTERS TO THE EDITOR

### Seed Grower Praises Harvester

Dear Editor:

There has been little or no publicity as yet about the newly developed pick-up machine for harvesting vine seeds. Work has been going on for many years, but with little success. Now there are several of these units which have operated for two or three years here in Colorado in commercial seed fields, so we may safely say that the "bugs" are out and we feel the machine is here to stay.

Hollar and Company, breeders of watermelon, cantaloupe, cucumber, and squash seed, has taken part in the development and manufacture of some of these units, and our individual growers have built some



in their own shops. Growers from California have taken some interest and are coming to Colorado to look over our units in operation.

The pick-up takes the fruit of cantaloupe, etc., from the field and elevates it into the thresher, thus eliminating hand labor almost completely. The fields are inspected and rogued prior to harvest.

A margin of safety will be added to the harvest when growers are not dependent on itinerant and sometimes organized labor for this type of work. One pick-up thresher will harvest as much as 12 men can cut by hand.

Rocky Ford, Colo.

V. E. Hollar  
Hollar and Co.

### "Buried Treasure" Pays Off

Dear Editor:

A few years ago I was raising quite a lot of New Zealand spinach, which is rather a favorite here. One season I had a lot of worms and lost the sale of the whole patch. After the spinach ripened and went to seed, I was ready to plow it under when one of my workers suggested I save some seed.

Purely out of curiosity, we swept up the seed with brooms until we had nearly 2000 pounds. After I'd cleaned it, I sent a sample to the USDA for test. It came back with a very high rating. Next, still out of curiosity, I sent a little ad for the seed to our state bulletin.

No sooner had this appeared than a local seedsman wrote me about it. Within two weeks we'd closed the deal, the seed was delivered, and I had more cash for the seed I'd saved than I would have had for the spinach crop. The seed has been one of my leaders since, and I can now easily see what I was missing.

North Miami, Fla.

R. B. Rushing

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Vegetable grower Bob Call, Jr., with trophy awarded him as Outstanding Young Farmer.

# CHANGE Is His Formula for SUCCESS

**Young R. V. Call in the short span of 10 years  
has converted the family farm into a thriving  
vegetable growing enterprise**

**By BILL STEMPFLE**

*Secretary  
New York Canning Crop Growers Cooperative,  
Batavia*

**T**O WIN top honors in a statewide contest is an achievement in itself. But vegetable grower R. V. Call, Jr., of Batavia, N. Y., went even further to top honors as Outstanding Young Farmer of 1959 in a national contest sponsored by U. S. Junior Chamber of Commerce and American Petroleum Institute.

Bob is primarily a grower of processing vegetables. He is, however, in charge of all crop production on the 1525-acre farm which he operates with a younger brother Richard, and which the two own jointly with R. V. Call, Sr.

Bob's farming career began in 1950, the year he graduated from New York State College of Agriculture. With money saved from the operation of a grain combine during the summer recesses and a tour of duty in the Navy, Bob acquired a 25% interest in the home farm and a third interest in the stock and tools.

Many changes have been effected in the 10 years that Bob has managed MT-Y Acres. The farm has been enlarged to include a dairy which is ably managed by brother Dick.

But the most significant change is in the cropping program and the intensive methods of crop and livestock production that have been put into effect.

In 1950, the year that Bob became his dad's partner, the farm grew 100 acres of dry beans, cabbage, potatoes, and tomatoes, and 25 acres of green peas, also 60 acres of wheat and 75 of feed grains—corn, oats, barley. For a total of 260 acres.

In 1959 the acreage in crops totaled 1075 with 75 acres of canning beets, 125 of green peas, 500 of snap beans, 200 of wheat, and 175 of corn, oats, and barley.

The production of feed grains has been increased to take care of the milking herd of 85 cows (none were kept 10 years ago). The poultry flock has been boosted from 850 to 6500 laying hens.

And in the shift, feeder lambs—a large and prosperous enterprise in western New York in earlier times—hogs, dairy heifers were discarded.

Bob was one of the first snap bean growers to use the mechanical picker. He now owns three machines. Last season he installed a battery of viners on the farm and now sells and delivers shelled peas to the processor.

MT-Y Acres under Bob's management is a highly successful family enterprise. He has reversed the trend of integration that deprives the farmer of management decisions that is so prevalent in present-day farming.

To complete the conversion of this general farm operation to specialized vegetable production, the poorly drained fields have been tilled, a million gallon pond has been dug, and a mile long pipe line has been constructed which, with other water sources, makes possible the irrigation of 75% of the crop land, thus insuring maximum yields of top quality vegetables.

Bob helped to organize the New York Snap Bean Growers Association and has served for two years as chairman of that 200-member organization. He is also president of Genesee Farm Bureau and chairman of the poultry and vegetable committees of New York State Extension Service.

It was because of these substantial qualifications that the local committee chose 33-year-old R. V. Call, Jr., as the Genesee County nominee in the Outstanding Young Farmer contest. And it was for the same reasons that the judges at the state level elected him to represent New York in the national contest.



Bob Call installed a battery of viners and now sells and delivers shelled peas to processors.



Mexican workers level boxes of tomatoes waiting transportation to sorting plant. Industry provides seasonal jobs, wages are as low as 80 cents a day. All Photos Courtesy: USDA, Foreign Agricultural Service

# The Slumbering GIANT BELOW THE RIO GRANDE

**Mexican workers are applying the know-how they get here to awaken their own tomato industry — a potentially big rival**

By WILLIAM J. MONAHAN

**JUAN GONSALEZ**, of Culiacan, Mexico, where the soil is rich but the farm skills meager, worked for three months and nine days in 1959 in the Modesto area of California. Home by October, Juan had \$500 of gringo cash in his pocket but, more important, he had a swatch of gringo know-how in his head and, after a fiesta with his cousins and compadres, he became a much sought after worker by vegetable growers in his native state of Sinaloa.

During the winter Juan added his new skills to the production of 500,000 tons of tomatoes, half of which were exported to U.S. markets, where they were vigorous competition for California and Florida tomatoes and baneful rivals to products of the greenhouse industry of Cleveland, Ohio, and other eastern metropolitan areas.

Juan and others of the 500,000 Mexican peons who make the annual trek across the Rio Grande to work on American farms are learning skills which are more valuable to the Mexican economy than the Yankee dollars they bring home. That booty amounts to some \$40 million a year and ranks second to the tour-

ist trade among Mexico's financial resources.

Tomatoes are the principal vegetable crop of Mexico. And if progressive Mexican growers ever put together the ingredients in the potent combination of a U.S.-trained farm labor force and Yankee investment dollars, there may occur the sensational awakening of a slumbering giant of fresh vegetable production in amazingly rapid fashion.

There is interest and some concern in what is happening below the border.

Currently, the California tomato grower is not worried by foreign competition. The processing tomato producer now sells canning tomatoes to the packers at \$22.50 a ton—sometimes less—and that is lower than the import duty on Mexican tomatoes. The summer and fall fresh vegetable producer knows that, in the domestic season, the foreign import can't meet his prices. And the California winter tomato grower, located chiefly in San Diego County, delivers to a huge metropolitan market of 7,500,000 people in his own southern California backyard, making him genially tolerant of competitive products from other regions.

The Florida grower is more con-

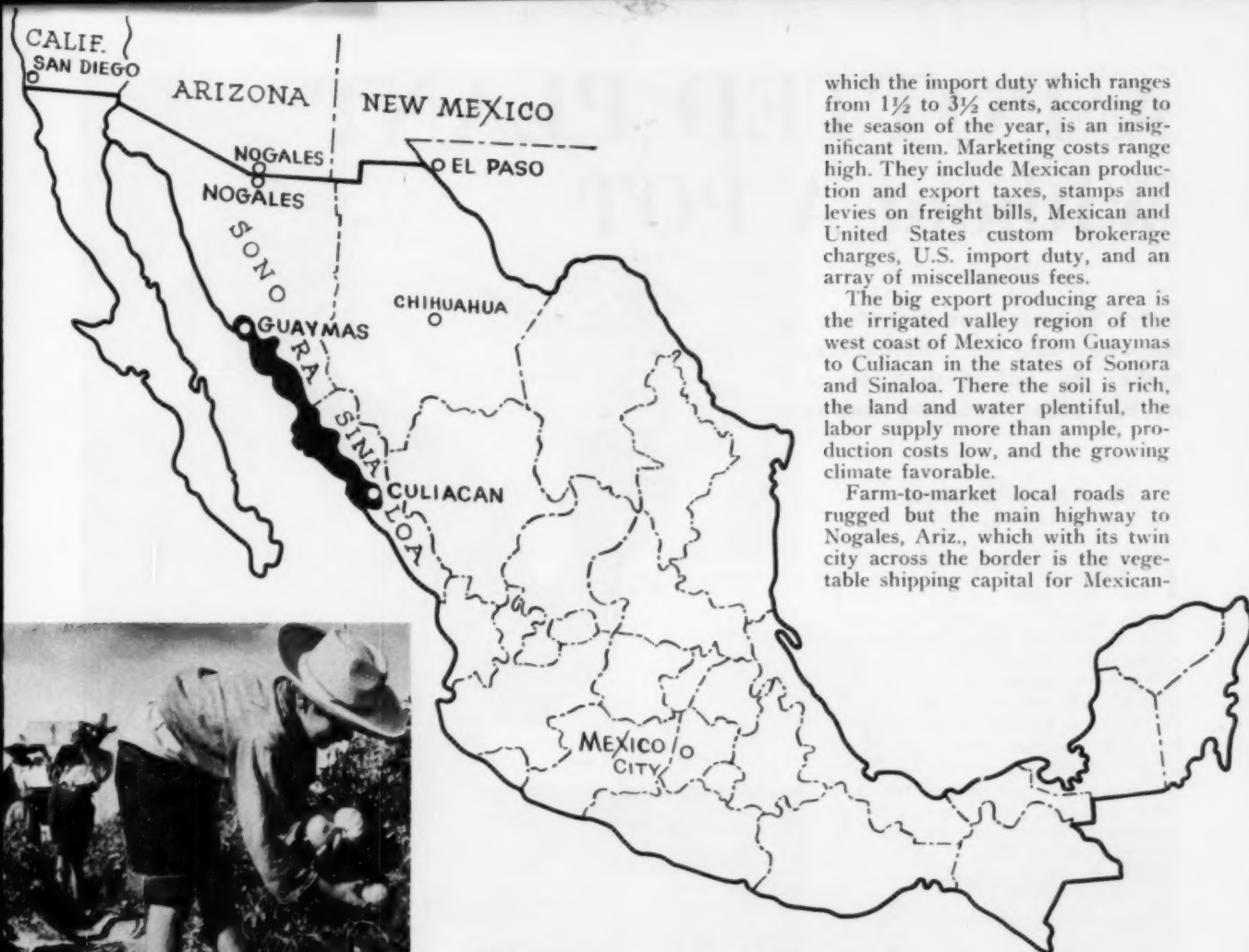


Mexico is importing both Yankee know-how, equipment. Workers sort on U.S.-made conveyor.

cerned. He has to compete each winter in eastern and midwestern metropolitan markets with Mexican tomatoes and although, when his crops are right, he can meet the challenge, he knows that Mexican tomatoes force down his prices. Floridians constantly protest the competition from Mexico. They want quotas on foreign vegetable imports.

The greenhouse industry suffers

AMERICAN VEGETABLE GROWER



which the import duty which ranges from 1½ to 3½ cents, according to the season of the year, is an insignificant item. Marketing costs range high. They include Mexican production and export taxes, stamps and levies on freight bills, Mexican and United States custom brokerage charges, U.S. import duty, and an array of miscellaneous fees.

The big export producing area is the irrigated valley region of the west coast of Mexico from Guaymas to Culiacan in the states of Sonora and Sinaloa. There the soil is rich, the land and water plentiful, the labor supply more than ample, production costs low, and the growing climate favorable.

Farm-to-market local roads are rugged but the main highway to Nogales, Ariz., which with its twin city across the border is the vegetable shipping capital for Mexican-



More than 8000 acres of staked tomatoes have already been planted for the 1960-61 season.

worst of all. Assuming that it costs about 20 cents a pound to get tomatoes produced under glass ready for the retail channels of the metropolitan areas of the East and Midwest, the greenhouse people are challenged by a Mexican product that can be delivered to Chicago, New York, and other major markets from 5 to 10 cents a pound cheaper.

Importation of Mexican tomatoes for U.S. consumption is nothing new. It has been going on for years, but recently the imports have been increasing; usage has been spreading; and the export season has been extended later and later into the spring to meet head on the U.S. greenhouse products.

The threat is chiefly in specific localities since the export supply of Mexican tomatoes is hardly enough to meet the U.S. winter demand for 500,000 tons of fresh tomatoes.

The Slumbering Giant. Over 68,000 acres of tomatoes were grown during 1959-60 season, with production centered on west coast (shaded area). Most shipments enter U.S. at Nogales, Ariz.



Vine-ripened tomatoes are shipped to U.S. markets in refrigerated trucks—each carrying 1200 two-layer flats weighing about 24 pounds net. Shipments are sometimes repacked at Nogales, Ariz.

Mexican production battles many bugs including the apparent inability to produce under existing conditions more than 250,000 tons of tomatoes that meet import standard regulations which are traditionally geared to the size and grade of Florida produce.

A major problem of Mexican tomatoes is the cost of marketing in

U.S. winter trade, is good and the railroad provides regular 27- to 48-hour delivery at Nogales.

It costs about 8 cents to harvest, grade, pack, and deliver a pound of green tomatoes to Chicago and about 11 to 13 cents to deliver vine-ripened tomatoes. A good grower who produces a high yield can grow  
(Continued on page 46)

# A POTTED PLANT Without A POT

**Dutch grower uses technique he learned in the Netherlands, makes an outstanding success of his plant growing business**

**By RAY SHELDRAKE**  
*Cornell University, Ithaca, N.Y.*

**I**N the Pompton Plains area of northern New Jersey, a young Dutch grower is producing vegetable and annual flowering plants in a big and different way. Art Van Wingerden, who has been in this country for only a little over 10 years, started in the plant growing business just five years ago. Like other vegetable growers, he found the production of annual plants a good business. The growth of his operation has been phenomenal. For example, during the 1959-60 season, Art built 29 plastic greenhouses. Each house is 125x20 feet and is covered with large sheets of 28-foot wide four-mil polyethylene.

Art is the oldest of seven brothers; was raised in Holland; and now has nine sons and three daughters. He is a progressive young grower with a tremendous amount of enthusiasm and ingenuity.

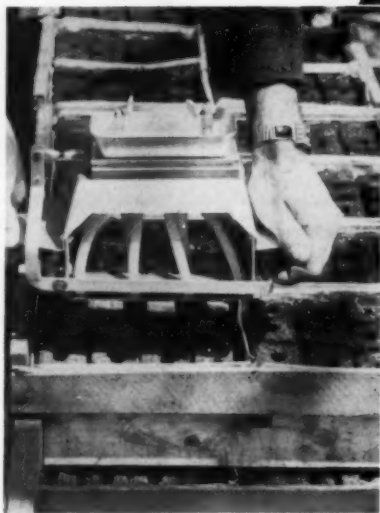
Using a technique employed in the Netherlands, Art designed and patented a machine for stamping out soil cubes. He feeds in a mixture of Holland peat, upland soil, perlite, and muck and the machine molds the soil cubes under pressure. Generally, he produces everything in dozen paks and the machine not only makes the cubes but bends up a thin aluminum pak to contain each dozen. The machine can also be set to form a hole in the cube to facilitate spotting out.

Art calls his operation Kube-Pak Incorporated. Four paks are put in a skeleton flat and the whole flat is then steam sterilized. The present machine will produce 500 paks an hour.

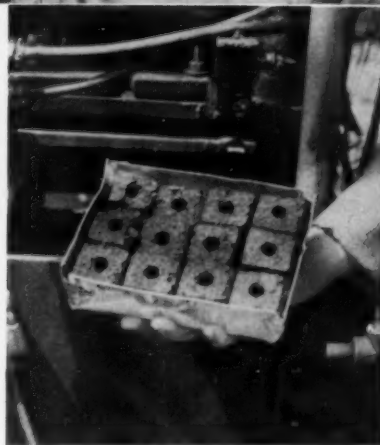
An interesting invention is his automatic seeder for direct seeding of paks. The seed supply is contained in the small well on top and by simply lifting a lever with your finger tips, seed is delivered down



Art Van Wingerden's potted plant needs no pot.



Art's automatic seeder for paks. When seeding directly, deep hole is not formed in the cubes.



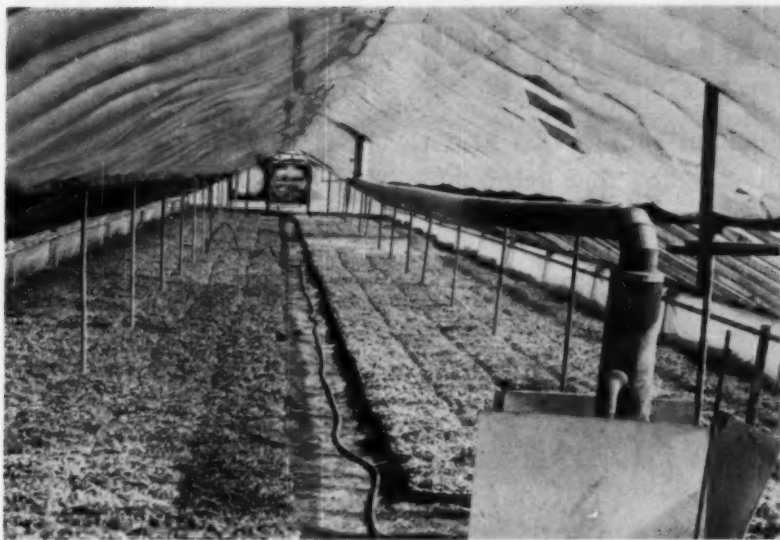
Van Wingerden designed machine that produces 500 paks an hour, also forms aluminum holder.

the plastic tubes in one dozen spots. It works well only on round seeds. He direct seeded all of his alyssum, portulaca, lobelia, and most of his petunias. The machine does not drop one seed only but drops a few in each place. He does not thin, but where a skip occurs, he replaces that cube. Each plastic greenhouse holds about 1200 flats and one man can seed it in a day—that's 4800 paks!

Interestingly, the cubes hold their identity throughout the growth of the plants. The surfaces appear to

run together but the cubes will break apart like ice cubes—thus he has essentially a potted plant without a pot.

For a number of his beginning years in this business, he used a multitude of hot beds and cold frames. Since Art has only four full-time employees, he soon realized the inefficiencies of this sort of opera-



Van Wingerden built 29 plastic houses last year. Each house is 125x20 feet, cost approximately \$200. All are fan cooled and heated with salamanders. Art plans to add 40 houses this year.



Art designed his own shipping boxes. Each box holds 70 flats (280 pks), can be unloaded from outside without being removed from delivery truck.



Using fork-lift tractor, Art can load boxes on truck in minutes. Most shipments are to metropolitan centers of New York and Philadelphia.

tion and he went all out with 29 new plastic houses. The houses are made of rough lumber and put up rather quickly. He figures they cost about \$200 each. Two of his men can cover two houses a day. Twenty-five hundred square feet of space for \$200 is the fact that convinced him to change to plastic houses.

Art is sold on thermostatically controlled fans for ventilating the plastic houses. These fans actually replace one man or more and really do a better job than a man could do by adjusting vents—which are also expensive.

Elimination of ventilators also makes it easier to cover the houses. Each house has one fan with 42-inch blades. One day while I was there, one of the fans had not come on and the house was over 100° F. But in a minute or two, after the fan started the air cooled down almost to outside temperature. A temperature

safety alarm would pay here. And a standby generator is a must when depending upon much electrical equipment.

Another of his laborsaving devices is the "stretcher" which holds seven flats. In many houses he leaves the flats on the stretcher while growing. Two men can move seven flats quickly or a fork lift can move many stretchers loaded with unplanted flats.

He has designed his own shipping boxes. They hold 70 flats and buyers order in this size unit. The boxes are loaded in the evening and when the trucks arrive in early morning, Art loads them with a fork-lift tractor. A truck is loaded in a few minutes and on the way to centers in the metropolitan area of New York and Philadelphia. Most of the material wholesales for \$2 a flat with some items costing about 50 cents more. A large printed order

form facilitates phone orders or buyers can mail in their orders.

The quality of his plants is excellent. Much of this he attributes to the excellent temperature control he gets with automatic fans. In many of the houses he has automatic watering using 180-degree nozzles in pipes along the sides. An interesting point here is that when the water is "fogged" on, the fans will shut off in a minute or two which could have considerable practical value when trying to keep a house cooler. Many nozzle types are available, and are excellent from the standpoint of applying water rapidly with a minimum of labor.

Art realizes that the one thing that must be perfect is his nutrient level in the cubes. He adds nutrients to his soil mix as indicated by a soil test. He is very interested in a purely synthetic mix for making cubes.

Art feels that the market is large for quality plants at a reasonable price. He kept sold out about a week ahead last year. He feels strongly that only about 10% of the potential bedding plant buyers are being reached and that leaves considerable room for expansion.

He plans to move his entire operation further south in New Jersey, to the Heightstown area. Forty plastic houses are planned for this year's operation.

Efficiency, enthusiasm, and ingenuity typify the entire operation of Kube-Pak Incorporated. Leaders like Van Wingerden will set the pace of future plant growing operations. The willingness to adopt radically new ideas, adjust operations to demand, and increase efficiency in all phases of production are trademarks of this aggressive pioneer in growing potted plants without a pot.

THE END.

# Making THE JOB EASIER

Here are some ideas the Dargoonian brothers of Massachusetts have developed which you may find helpful too

By CHARLES L. STRATTON



Oil makes the wheels go round and also helps to prevent freeze-up and rusting of equipment. Here Ben Dargoonian applies old crankcase oil to bottom of fertilizer spreader as precaution.



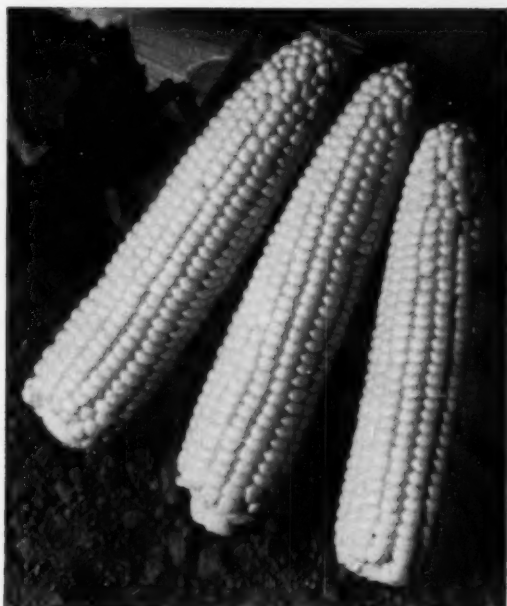
With homemade spray boom, Garabed can spray three beds at once. Two 64-inch booms of 3/4-inch lightweight aluminum pipe equipped with three nozzles each spray exactly on beds. Plastic connections at end of each boom (inset) enable folding towards tractor for garage clearance.



Whether it's rock-and-roll or Brahms, the Dargoonians can enjoy music while they cultivate. Garabed installed used portable car radio on tractor. Mounted in two-sided box, radio is covered with Pliofilm for dust protection.

Light and fluffy—that's how Ben Dargoonian finds soil after using Howard Rotavator (Harvard, Ill.). Dargoonians plow under cover crop two weeks before they plan to plant, then spread fertilizer and rotavate to break up soil lumps. Rotavator cuts soil compaction, eliminates harrowing.

# HARRIS SEEDS



## Harris' NORTHERN BELLE

This outstanding Harris introduction may well become the leading hybrid in Carmelcross season. It combines heavy yields with the large ears and narrow glossy kernels your market is looking for. The 7½-8 in. ears are appetizing looking, of fine quality and full right to the tips. Plants are erect and stiff-stalked with few tillers, resistant to lodging. Highly recommended.



## Harris' PINK BOUNTIFUL Petunia

Here's a brand new Harris specialty your bedding plant trade will appreciate—a true pink petunia, clear and luminous. The 2½-inch flowers open early and in tremendous numbers on compact mounded plants only 10 inches tall. Unaffected by periods of damp and unfavorable weather.

## First Choice of Expert Growers

The growers who set the pace on many markets start with Harris Seeds. They know that no matter how much skill and experience go into raising a crop, it's the superior product that brings ready sales and premium prices. They have found that specialties offered by Harris Seeds are recognized as the standard by which others are judged.

## FRENCH HORTICULTURAL Harris' Special Strain

Years of painstaking selection in our crops has produced a strain that critical growers prefer over all others. Pods are remarkably long, straight and uniform with brilliant scarlet markings. The beans are large and plump. Where markets want French Horticultural beans, Harris Special Strain is recognized as the best to grow. We urge you to try it.



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<b>TREASURE</b>	<b>EMPIRE ABUNDANCE</b>

Limited supplies of these popular hybrids still available. Write or phone for prices and full information.

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## As It Looks To Me

By JOHN CAREW

Michigan State University, East Lansing

**A** BANKER'S view of the vegetable business. That's "Commercial Vegetable Production in California," a critical analysis of the vegetable industry prepared by Dr. John A. Hopkin of the Bank of America.

Here's what this leading credit institution has to say: **The importance of vegetable production in California:** More than one-third of the total commercial vegetables produced in the United States are grown in California. California's share of the processed vegetable market increased from 16.3% to 29.8% between 1941 and 1958. Fresh vegetables increased from 34.9% to 37.5%.

Average vegetable yields in California increased more than 80% during the same 18-year period. Although asparagus and melons showed no increase, yields of processing tomatoes, fall celery, and summer lettuce more than doubled.

**The changing organizational structure of the industry:** Food processors and distributors increasingly are integrating with producers and exercising greater control over quality, quantity, and timing of products entering their plants.

Marketing agreements and orders have been put into effect for asparagus, cantaloupes, lima beans, lettuce, and Brussels sprouts.

With the increased emphasis on specification of quality, quantity, and timing by food retailers, small local market garden areas throughout the nation will be bypassed in favor of larger specialized areas with highly organized and efficient producing and marketing arrangements. This will favor California.

But as other areas adapt their methods to meet these market changes, some of the present advantages of California vegetable producers might be lost.

**The future of the vegetable industry in California:** By 1975, California probably will be producing 36% of the nation's vegetables; in contrast to 33.1% in 1958.

Total consumption of all vegetables is projected to increase 53% by that time. Assuming an average yield increase of 25%, some 850,000 acres of vegetables will be required in Cali-

fornia, an increase of 200,000 over present figures.

**The future for tomatoes:** California's share of the processing tomato market has increased from 22% in 1941 to 61.3% in 1958.

Credit for this shift away from the Atlantic and North Central states is given to higher yields, longer packing seasons, color and firmness advantages, larger farms, and farmers with more business experience in producing under rigid contracts.

California's share of the market will increase but at a much lower rate; yields in other states may increase at a faster rate, and western tomato products have been resisted by consumers accustomed to the higher acid content of the eastern product.

**The future for lettuce:** Per capita consumption is projected to reach 25 pounds in 1975 in contrast to 20 pounds in 1957. California probably will be producing no more than 55% of the nation's total lettuce by that time (down from 61% in 1958) because of increased competition from Arizona and Texas.

**The future for asparagus:** The relative shift of asparagus acreage out of the state can be attributed to lower yields and the use of marketing orders.

Although the effects of marketing orders on quantity and price are unknown, it is clear that if the quantities marketed have decreased and average prices increased, production in other areas has been encouraged at the expense of local production.

**Capital requirements and credit needs:** Vegetable production increases will occur primarily under three types of organization, all closely integrated with processing or distributing firms:

Processing, packing, or shipping firms operating owned or leased land to produce their own products.

General crop farms that will modify their present cropping patterns to include growing vegetables on contract.

Highly specialized growers operating on rented land and raising one or two vegetables under contract to packers and shippers.

The most crucial credit needs for the increased production of vegetables will be in operating funds rather than in capital.

If the producer is a processing or packing firm or an established farmer raising vegetables as a supplement to



general farm crops, no serious credit problem exists.

But most typical vegetable specialists have had to turn to packing houses or canners for operating capital. Lenders justify this differential treatment of vegetable producers on the grounds that vegetables are riskier crops.

According to a careful analysis, however, based on average yields and prices, there has been little historical justification during the last 21 years for discriminating against several crops, namely, asparagus, processing tomatoes, carrots, and celery. (Coefficients of variation for yields, prices, and income were presented for the major vegetable crops.)

For fresh vegetables, growing the same crop in different geographic areas or for different seasonal markets offers a better means of reducing risk than growing different crops in the same area during the same season.

Farmers not in a position to diversify geographically will tend to produce fresh vegetables on contract for firms that operate in all seasons.

Vegetable production and marketing requires alert, skillful, and experienced management. Regardless of other considerations, if these factors are not present the situation is too risky to warrant bank financing.

## FIGHTING NEMATODES

"FLORIDA vegetable growers can reduce damage from root-knot nematodes by rotating susceptible vegetable crops with pangolagrass pasture," says N. C. Hayslip, entomologist in charge, Indian River Field Laboratory, Fort Pierce. "Our tests reveal that pangolagrass in rotation with vegetables keeps nematode damage low."

Hayslip began a vegetable-improved pasture rotation study in 1950 in an effort to solve some of the production problems on previously farmed soils. The tests have indicated that root knot may be reduced by including pangolagrass in a rotation with a susceptible crop. Use of the rotation is suggested only for commercial operations on lands used for winter vegetables and pastures.

"Effectiveness of this treatment depends on ability to obtain a pure stand of pangolagrass," says Hayslip. "Make heavy plantings of pangolagrass sprigs to promote rapid cover. Sprig the grass into the sides of beds when the vegetables are laid by, or plant it soon after the last harvest of the vegetable crop. Maintain a heavy cover of pangola at all times to prevent the invasion of competitive weeds and grasses."

FEBRUARY, 1961

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**ADD UP THE SAVINGS** in time, labor and materials and you'll agree that it will pay you to convert your high pressure sprayer into an efficient, air-type unit with a John Bean Aircrop Attachment. Choose the new 20-RC or one of the other two models. Any one will enable you to spray your acreage faster, with thorough coverage, using less water, without boom breakage and nozzle clogging difficulties.

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FOOD MACHINERY AND CHEMICAL CORPORATION  
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# EASTERN GROWERS ATTEST:

**Jiffy-Pots<sup>®</sup>**  
are the best for  
starting tomato  
and vine crops



Inspecting melons started in Jiffy-Pots at George Bear's, Carlyle, Pa. Bear seeds in pots May 1, sets in field June 1. Picked first cantaloupes in 1960 season on July 30 when weather was hot, flavor best. His reasons for using Jiffy-Pots: "Surest way to have melons—and uses less seed, which at \$95 per lb. for hybrids is not to be overlooked. Less cost due to one month less weeding in the field—insect control less, too.

"You just have more control, and no skips in the field. Direct seeded will pick two weeks later than Jiffy-Potted every year. This year, due to weather conditions, it was about three weeks."



Ralph Hollerbush, Dover, Pennsylvania. 2500 3-inch Tomato Hybrid Big Boy, Morton Hybrid, etc. planted last week in April, outside. He has been doing this for three years and gets two to three weeks earlier yield—no shock—gets start on the other fellow—no difficulty, no matter how dry it is, you can plant. He does 10,000 flats of vegetables and flowers, sells his produce and flowers on the fresh market in Harrisburg at retail. Picks up two weeks with Jiffy-Pots over flats—if you get a shower after planting bare root, plants are O.K. But if the weather is dry, the Jiffy-Pots are much better. "I just like them." These Tomatoes will be staked with redwood stakes—he very much prefers growing staked Tomatoes.

Howard Mills, one of the fresh market growers in Baldwinsville, New York, was setting out a field of 60,000 Jiffy-Potted Tomatoes for fresh market the day we visited him last May. Mills has been doing this for three years. We asked him why he uses Jiffy-Pots. He replied, "If you have a good spring with the right amount of moisture, bare root plants will take right off along with Jiffy-Potted plants. But we often have bad weather in May. If it's too dry, the Jiffy-Potted Tomatoes get a better start because we soak them before planting out. If the weather is too wet to plant, we can easily hold them for later planting. All in all, Jiffy-Pots provide us with a sort of crop insurance—we find they generally come in a week or ten days ahead of local production, which brings a better price." Kenneth Mills, driving the tractor, and Leland operating the left side of the transplanter.

**Midwest . . . South and West  
also Attest to JIFFY-POT Success!**



**JIFFY-POT<sup>®</sup>**  
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## PRICES

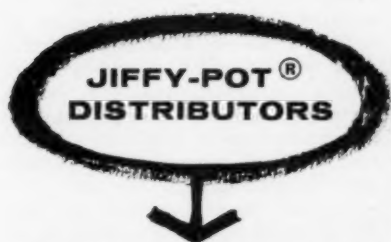
## EASTERN STATES\*

Mod. No.	Top Diam. and shape	Depth of pot	Lbs. per Case	Pots per Case	Price per Case	Price Per 1000 Pots 1-9 Cases	10-24 Cases	25 Up** Cases
115	1 1/2" Round	1 3/4"	17	3000	\$17.10	\$ 5.70	\$ 5.30	\$ 4.90
122	2 1/4" Round	2 1/4"	37	3000	22.50	7.50	7.00	6.50
222	2 1/4" Square	2 1/4"	37	2500	20.25	8.10	7.60	7.00
130	3" Round	3"	37	1500	19.95	13.30	12.30	11.30
230	3" Square	3"	40	1000	15.50	15.50	14.50	13.50
335	3 1/2" Shorty	2 1/2"	37	1500	19.50	13.00	12.00	11.00
140	4" Round	4"	35	500	14.75	17.75	16.50	15.25
240	4" Square	4"	45	500	15.00	29.50	27.50	25.50
425	2 1/2" Rose	3 1/2"	35	2000	20.00	30.00	28.00	26.00
517	1 3/4" J. Strips	2"	35	3600	24.84	10.00	9.25	8.50
						6.90	6.40	5.90

\*WESTERN STATES: Add 5% to above prices on shipments into Ariz., Alaska, Calif., Hawaii, Idaho, Nev., Oreg., Utah, and Wash. Eastern prices apply to all other states.

\*\*Additional quantity discounts from 25 case prices. Orders of: \$1500, 2%; \$3000, 3%; \$6000, 5%.

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## PEPPERS

### Virus Control

**P**EPPER is probably as subject to loss from virus infection as any crop grown in the United States. This situation certainly prevails in Florida where at least six different virus diseases have been found affecting the crop. Not all of these pose a serious menace, but two of them, potato virus Y and tobacco etch virus, frequently destroy up to half of a planting. Two others, cucumber mosaic virus and tobacco mosaic virus, often take a 10 to 20% toll.

The three most important viruses, potato virus Y, tobacco etch virus, and cucumber mosaic virus, are all carried *only* by aphids and in the same manner; thus a control that works against one disease should be effective against the others.

The difficulty in finding a good control has stemmed from the way aphids transmit these viruses. Aphids are capable of acquiring virus from diseased plants in as little as 10 seconds of feeding time. Likewise, they can regularly transmit virus to healthy plants in a matter of seconds of probing.

These two facts essentially explain why insecticides, even such powerful phosphatics as parathion and demeton (systox), fail to give virus control when applied to the crop. These chemicals *do not act quickly enough* to prevent either acquisition or inoculation of viruses even though they do eventually kill the aphids.

It is well established that aphids lose the virus (become noninfective) within 30 to 60 minutes after acquiring it. This points up the importance of the very mobile winged forms of aphids in accounting for virus spread.

Aphid species like the green peach aphid, *Myzus persicae* (Sulz), that normally move frequently from plant to plant can cause a great deal of spread even though the number of winged individuals is small. Thus, it frequently happens that growers do not see large numbers of aphids in their pepper fields even though virus is spreading rapidly.

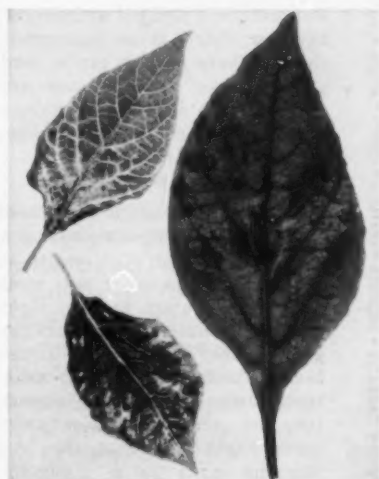
This relative severity of aphids in no way minimizes their importance as vectors. It should be emphasized that there is no evidence to implicate any other agent (insect, environmental, etc.) as vectors of these viruses.

After it has been established what viruses are involved and how they are transmitted, there remains the problem of determining where the virus comes from. In the case of the three pepper viruses, it has been found that they always get into the crop via

### SYMPTOMS OF APHID-BORNE VIRUSES ON BELL PEPPER



Roughening, mottling caused by potato virus Y.



Symptoms of tobacco etch virus in pepper leaves.

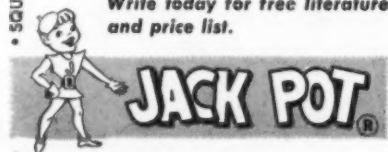


Stunted fruit, plant (cucumber mosaic virus).

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This type of transmission (primary spread) accounts for only a small part of the total spread in the crop. Most of the transmission in the field is the result of aphid flights between diseased and healthy pepper plants (secondary spread).

This can be exemplified by a short discussion on the merits of virus-host plant eradication programs. Destruction of diseased weeds is a highly effective way of preventing introduction of virus into the crop.

**Our work has shown** that virus introduction usually involves weeds that are growing within a few hundred feet of the crop. Only when large numbers of aphids are flying and considerable numbers of diseased plants are present (such as are found on abandoned croplands) is there much chance of virus being brought in from distant areas. Even under these conditions, virus is almost never carried more than a mile at a time. Generally, infections can be traced to weeds along the margins of a field.

Since some of the infected weeds always escape destruction, additional procedures are usually necessary to limit introduction of virus by aphids. The most direct method is to apply insecticides on the uncultivated areas where the aphids build up.

Our work has shown that spraying parathion on infected weeds greatly reduces the numbers of transmissions to peppers growing close by. Although spread to pepper within 3 feet of the sprayed weeds was not affected, pepper plants placed 15 feet away were infected only about one-fourth as often as those planted at a 15-foot distance from unsprayed virus-infected weeds.

Such insecticide applications will have a twofold effect on introduction of virus. First, the numbers of winged aphids will be reduced. Second, the potency of infected plants that have been sprayed will be lessened.

Another procedure that has been shown to be useful in preventing introduction of virus involves growing a protective border of an immune crop plant.

Experiments have shown that a 50- to 100-foot swath of a nonsusceptible crop (either high or low growing) planted between the peppers and the edge of the field will greatly reduce the chances of infective aphids bringing virus into the crop. The reason



Left, potato virus Y affected; right, healthy

for this is that infective aphids flying into the field land on the immune plants, feed for a few minutes, and lose the virus during this time.

It is generally possible to delay introduction of virus by about three weeks through the use of a plant barrier crop.

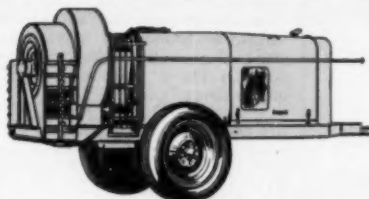
**All of these approaches** to pepper virus control are primarily useful in delaying introduction of virus into the field. None will prevent it and once the virus has become established in the crop, the value of such procedures (except for general spraying of insecticides on areas of aphid buildup) is largely lost. Once virus is established in the crop little can be done to limit the rate of spread.

As yet, chemicals that affect virus spread are not available, and until such compounds are found there is little hope for optimism in restricting secondary spread. However, delaying entry of virus for several weeks is often sufficient time to ensure production of most of the pepper crop. This is because fruit already formed at the time of virus infection generally develops with no symptoms.—*John N. Simons, formerly with University of Florida, presently with Stanford Research Institute, South Pasadena, Calif.*

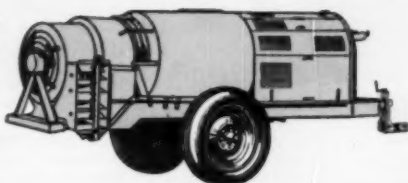
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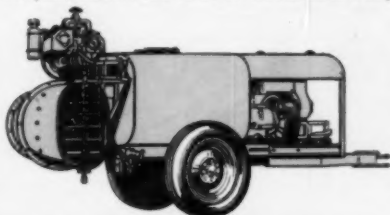
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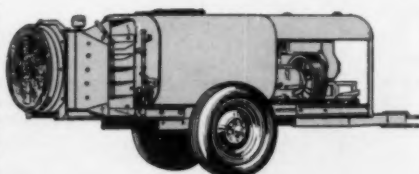
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Unretouched photo shows Myers superior two-way coverage

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at low cost.

Pictured 200 gallon model, 20 gpm pump (500 lbs. — 8 pistons) features plastic lined tank, mechanical agitation and is extremely simple and maneuverable. Other model sizes: 15, 25, 50, 100 gallon with pump capacity 5 to 11 gpm.

Write for Literature

SKIBBE SEED & FERTILIZER SPREADER, SODUS, MICH.

## Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a four-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

### CHEMICAL FOR CLEANING POTS

I enjoy every issue of your magazine, particularly Dr. Sheldrake's column since I grow bedding plants.

It seems to me that somewhere or other I heard of a chemical which could be used to remove algae from clay pots and clean them. I've forgotten what the solution was, but I think it contained copper sulfate and had Stoddard's Solvent as the liquid carrier. Do you know anything about it?—Pennsylvania.

Some growers clean and sterilize plastic pots with a 4% solution of formaldehyde. This is satisfactory since the plastic does not absorb the solution. It could probably be used on clay pots, too. Even though the clay pots will absorb the chemical, it will evaporate in time.

Most growers today sterilize clay pots by heating them or placing them in the soil sterilizing retort. They don't feel they can afford to wash and clean pots other than to sterilize them.

It wouldn't be wise to use either copper sulfate or Stoddard's Solvent on clay pots since they will probably absorb enough solution for a toxic carryover to subsequent plants.

### HIS POTATOES ARE SCABBY

My potatoes this past season were covered with corky scabs, some depressed, some raised. What caused this, and are the potatoes still good to eat?—Ohio.

Corky areas on potatoes that look like slightly raised or sunken scabs often indicate common scab. In some cases there will be only a few spots on a tuber, but occasionally the whole potato may be covered.

Common scab does not affect the potato's food value, but it does spoil its appearance and causes some peeling waste.

Usual control measures for common scab include altering the soil pH to 5.2 or slightly below, planting resistant varieties, using long rotations, and spot treating the soil with pentachloronitrobenzene (Terraclor) or urea formaldehyde concentrate.

### FELLETED SEED SOUGHT

Will you please tell me where I can buy pelleted seeds?—Tennessee.

Our July Buyer's Guide lists the following sources: Asgrow Seed Co., 272 George St., New Haven 10, Conn.; Filcoat Coated Seeds, 6400 E. Washington Blvd., Los Angeles 27, Calif.; Germain's, Inc., 6400 E. Washington Blvd., Los Angeles 27, Calif.; Keller Seed Store, Shawnee, Okla.; F. Lagomarsino and Sons, Sacramento, Calif.; J. Chas. McCullough Seed Co., Eggleston Ave., Cincinnati 1, Ohio.

### NEEDS BEAN MARKETING DATA

I grow several vegetable crops for market and I've been thinking lately of making snap beans one of them. Is there any booklet around which would give me some marketing data on snap beans?—Florida.

There's a new 18-page publication on marketing snap beans which should give you the information you need.

Among the subjects covered are production, sources of supply, varieties, packaging, transportation, marketing season, and market diseases.

The snap bean report is one of a set of booklets covering 79 different crops published by United Fresh-Fruit and Vegetable Assn., 777 14th St., N.W., Washington 5, D.C.

AMERICAN VEGETABLE GROWER

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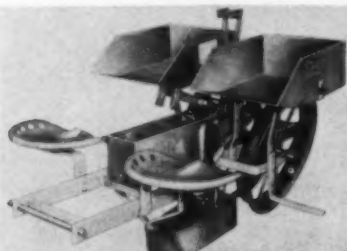
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# POTATOES

## Cut 'em Automatically

ONE of the most costly operations in potato production has been the hand cutting of seed potatoes. More than \$10 million has been spent each season to complete the hand cutting operation. Now, with the development of automatic cutting machines, nine-tenths of the labor needed in hand cutting has been eliminated.

No longer is there any need to cut seed in advance of planting time. The automatic cutters, such as the Lockwood Triple Head Seed Cutter (Lockwood Graders, Gering, Nebr.) and the Troyer Combination Cutter (Troyer Mfg. Co., Smithville, Ohio), can keep pace with a four-row potato planter even when the planter is operated at top speed.

In addition to the completely automatic machines which size and cut the potatoes into two, three, or four pieces, semi-automatic or placement machines have been developed. The tubers are placed by hand according to their shape and size and are then cut automatically. These placement machines cut labor requirements 50%. Two semi-automatic machines now available are the Brown (Mattituck, N. Y.) and the Trexler (Trexler Potato Cutter, Lenhartsville, Pa.).

One of the newest innovations in cutting seed potatoes is the Warren Cutting Potato Planter, manufactured by Lewis Manufacturing Co., Klamath Falls, Ore. The cutter-planter is designed for planting the four-piece size tuber only, and is available in either the two-row or four-row size.

One man is needed for each row. While riding on the back of the machine, he places the tubers in the machine which cuts them into four pieces. The knives are disinfected after each cutting. The machine saves half of the hand labor formerly needed. And the freshly cut seed is planted immediately.

One of the problems in using automatic and semi-automatic cutters has been getting the desired size pieces. Last spring, I made a study of the various ways of cutting seed potatoes employed in Iowa and the Red River Valley. I collected 100-piece samples from two big hand-cutting operations, from four placement or semi-automatic machines, and from six automatic cutters. Each piece was then weighed on an air-mail scale sensitive to one-third ounce.

Of the hand-cut pieces 86% were within the desired 1- to 2-ounce range; of the pieces cut by placement machines, 76%; and of the pieces cut by the automatic cutters, 65%. The slivers and oversize pieces offset labor saved by the automatic cutters.

The usefulness of the automatics is not in saving costs but in the keeping of four-row high-speed planters going without having to cut seed previous to planting time and without assembling and re-assembling a hand-cutting crew.—C. L. Fitch, Sec'y-Treas., Iowa State Vegetable Growers' Assn., Ames.

## More Certified Seed Spuds

THE 1960 crop of certified seed potatoes is estimated by USDA's Crop Reporting Board at 35,074,478 hundredweight, 8% above last year and 23% above average. For the 14th consecutive year, Katahdin was the leading certified variety with 12,782,093 cwt. Three new varieties—Erlired, Fundy, and Avon—were reported for the first time by certifying agencies.

## Side-dressing Potash

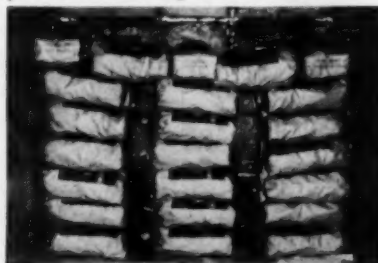
BETTER yields result when half of the potash fertilizer for potatoes is side-dressed, according to tests conducted at Connecticut Experiment Station.

In the tests, the potash chemicals were side-dressed when the plants were 2 to 3 inches high. In side-dressing half of the potash and also half of the nitrogen, the young plants were more vigorous—especially in dry season. Yields were equal to or better than when all the fertilizer had been applied in side-bands at planting.

## Keeps Them Cooler

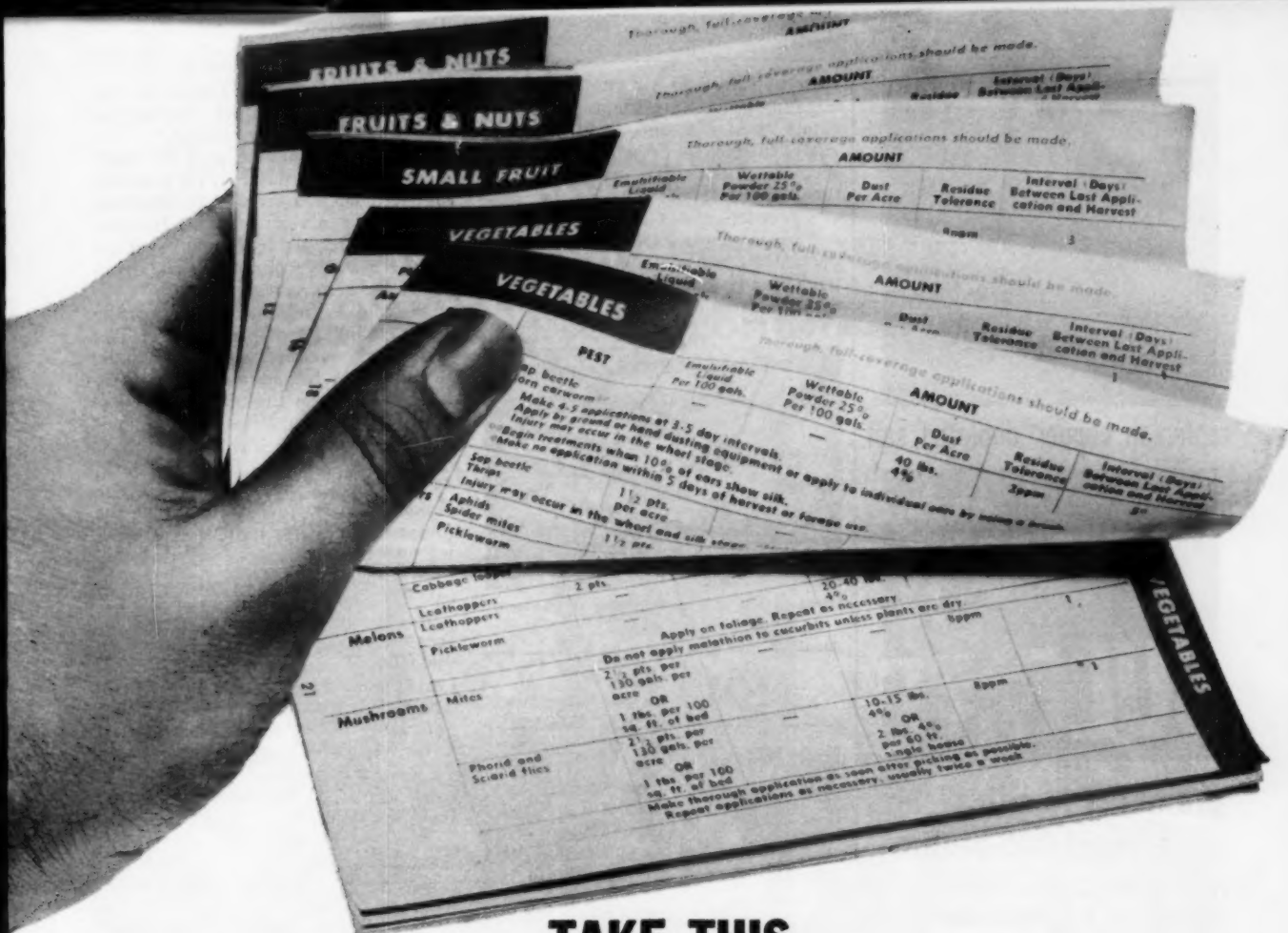
LONG needed by the potato industry, an improved stacking method that allows good air circulation for potatoes packed in 50-pound bags and transported in trucks has been developed by USDA researchers.

The stacking pattern provides eight air channels running from front to back of the trailer. First stack of potatoes is arranged in three columns



First three stacks with vertical air channels.

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**Malathion simplifies spray schedules.** Because malathion is a powerful phosphate insecticide, it offers wide-range insect control. It takes the place of many special-purpose insecticides.

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warm-blooded animals, malathion has high residue tolerances. And, because it leaves no persistent residues on food and feed crops, malathion greatly reduces drift-residue problems. For these reasons you can use malathion close to harvest of fruit and vegetables.

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with two vertical air channels; subsequent stacks are arranged alternately crosswise and lengthwise.

By closing the inside vent in the bunker bulkhead, air entering through the front vents on the trailer's nose circulates through the load.

Proper ventilation is especially important for early potatoes which are tender and particularly susceptible to spoilage from overheating.



## SWEETS

## Just Released

**T**ANHOMA, a new variety, has been released by University of Oklahoma. It was developed by Dr. Howard B. Cordner, who developed the Allgold, Redgold, and Nemagold varieties.

A heavy producer, Tanhoma is less susceptible to wilt and stem rot and more resistant to internal cork. Keeping quality in storage has been excellent.

Certified seed stock will be available for commercial and individual plantings this year.

# TOMATOES

## The Big Shift

**W**ITHIN the short span of 20 years, striking changes have taken place in the production of tomatoes for processing.

During the period 1935-38 to 1955-58 production more than doubled, increasing from 1,839,000 to 3,880,000 tons. But acreage declined almost a fifth, from 434,000 to 334,000. Average yield, on the other hand, tripled from 4.2 to 11.6 tons per acre.

Even more startling are the changes in the geographic pattern of production. In a recent issue of USDA's *The Vegetable Situation*, Will N. Simmons, head of Fruits and Vegetables Section of Statistical and Historical Research Bureau, presented a clear-cut picture of these

shifts in his report, "Trends in the Geographic Pattern of Production of Tomatoes for Processing."

In 1935-38, Indiana was the leading producer of tomatoes for processing, with 85,300 acres in production. By 1955-58 acreage in the Hoosier state had dropped to 29,600. Average yield, however, had doubled, from 4.1 to 8.6 tons per acre.

**Why did Indiana growers take 55,700 acres out of production?** The main reasons were economic conditions within the industry and their inability to meet the increasing competition from the West.

Unlike Indiana, California almost doubled its acreage, from 70,200 in 1935-38 to 137,300 in 1955-58. The Golden state now dominates the tomato processing industry, producing more than 60% of the national total (an average of 2,352,900 tons in 1955-58).

Biggest factor in California's increase in production is high average yield which more than tripled in 20 years, from 5.3 to 17.7 tons per acre. The California tomato processor also gets more of the final product from a ton of raw material. A ton of California tomatoes will yield 46 cases of juice compared to 41 cases from a ton of New York tomatoes.

A dry climate that helps to reduce development and spread of diseases and the fact that nearly all of its acreage is under irrigation are perhaps major reasons for California's high yields.

The Golden state benefits, too, from a long growing season, averaging about 240 frost-free days. The development of the Pearson, the major variety grown in California, has contributed to higher yields. The Pearson is a large-vined determinate variety which sets fruits continually and its fruits remain firm on the vine for as long as 30 days after ripening.

A sharp decrease in production occurred in several states in addition to Indiana. Maryland, once the third leading producer with 59,100 acres, dropped to ninth place, with 11,700 acres, although average yield increased from 3.5 to 6.8 tons per acre. Main reason for the decline in acreage was the shift to other vegetable crops with small labor requirements because they are more completely mechanized.

Arkansas, Missouri, and Delaware also had sharp decreases in acreage. Low yields in Arkansas and Missouri, 2.9 and 2.3 tons per acre respectively, probably account for the drop from 14,300 to 2800 acres in Arkansas and from 12,500 to 1500 acres in Missouri.

In addition to California, Pennsylvania increased its acreage from

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**Tailor-made seed conditioning**—Ferry-Morse treats each vegetable variety individually—uses scientific methods to condition seed for longer life. Because most seed can be injured by excess heat and

moisture, Ferry-Morse dries it to just the right moisture content for maximum germination.

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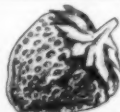
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14,200 to 20,600 and Texas from 8200 to 17,500.

The increase in acreage in Texas is surprising in view of the fact that average yield remained virtually the same during the 20 years—2.2 tons per acre in 1935-38 and 2.9 tons in 1955-58. The Texas crop is often damaged by frost and by heavy and untimely rains, contributing to the low average yield.

Also, the tomato processing industry in Texas is secondary to its fresh market operation. Location and climate of the state enable it to produce

**GEOGRAPHIC SHIFT IN  
 PROCESSING TOMATO PRODUCTION**  
 (States with Over 10,000 Acres in Production)

State	Acreage (average)		Average Yield per	
	1935-38	1955-58	1935-38	1955-58
Indiana	85,300	29,600	4.1	8.6
California	70,200	137,300	5.3	17.1
Maryland	59,100	11,700	3.5	6.8
New Jersey	33,700	22,630	5.0	9.2
Virginia	23,100	11,820	3.1	4.1
Ohio	19,800	19,400	5.5	10.3
New York	19,300	13,500	7.3	8.1
Arkansas	14,300	2,800	1.8	2.9
Pennsylvania	14,200	20,400	5.3	8.0
Missouri	12,500	1,500	1.7	2.3
Delaware	12,400	4,100	3.4	8.1
Illinois	10,900	9,600	3.3	12.3
Texas	8,200	17,600	2.2	2.9

for the early fresh market and to a limited extent for the late spring market. Tomatoes not meeting fresh market standards, or acreage for which there is not sufficient fresh market demand moves into processing.

A study of prices received in the various states in 1958 reveals a fact as surprising as the shifts in the geographic pattern of production. California, despite its high yield of 17.2 tons per acre, was fourth in income, receiving an average of \$390.44 per acre.

Illinois, with an average yield of 13.6 tons, topped the listed with an

**PROCESSING TOMATO PRICES  
 RECEIVED IN 1958**  
 (States with Over 10,000 Acres in Production)

State	Acreage	Yield per Acre	Price per Ton	Income per Acre
Illinois	10,300	13.6	\$30.40	\$413.44
New Jersey	19,900	12.5	32.90	411.25
Pennsylvania	19,500	12.5	32.40	405.00
California	152,900	17.2	22.70	390.44
New York	11,100	9.6	31.90	304.26
Ohio	22,600	9.9	28.50	282.15
Maryland	12,400	7.5	31.10	233.25
Indiana	29,000	7.3	27.20	199.54
Virginia	12,000	4.0	29.40	117.60
Texas	19,000	3.8	24.50	93.10

average income of \$413.44; New Jersey, with an average of 12.5, received \$411.25; and Pennsylvania, with the same average yield, received \$405. Texas was lowest in income with \$93.10.

Availability of processing outlets and the number of alternative crops

in production are just two of the factors affecting processor prices.

**What will be the processing tomato production picture 10 to 20 years from now?** With the advent of mechanical harvesting another big shift may occur. A state like Maryland, for example, which shifted to crops which can be harvested by machine may re-enter the ever-changing picture.

**Welcoming Plants**

**THE** key to a successful tomato crop may be the manner in which you welcome your plants. Here are a few helpful hints on handling shipments of plants:

Remove three or four bundles from each crate and set them aside in an empty container. There should be enough space for air circulation around the plants.

If the plants are packed in peat moss, the moss must be kept damp if the plants are to be held for any length of time. After removing several bundles to allow air circulation, dip each crate in 2 inches of water for five minutes to moisten the moss. Be careful not to get water on the leaves.

After dipping, tear the paper wrapper that is around each plant bundle, to allow water to drain off readily after the packing is soaked.

Set the plants out in the field as soon as possible.

Remember, the way to welcome plants is to handle them carefully.

**For Mechanical Harvesting**

**THE** development of mechanical tomato harvesters has created the need for new varieties suitable to machine harvesting. Such a variety has just been released by University of California Agricultural Experiment Station, Davis.

VF145, developed by G. C. Hanna, department of vegetable crops, is an early canning variety suitable for mechanical harvesting. It is resistant to fusarium and verticillium wilts. An experimental type, VF145 is designed to permit growers and processors to obtain experience in developing cultural and handling methods for future mechanization of the tomato industry.

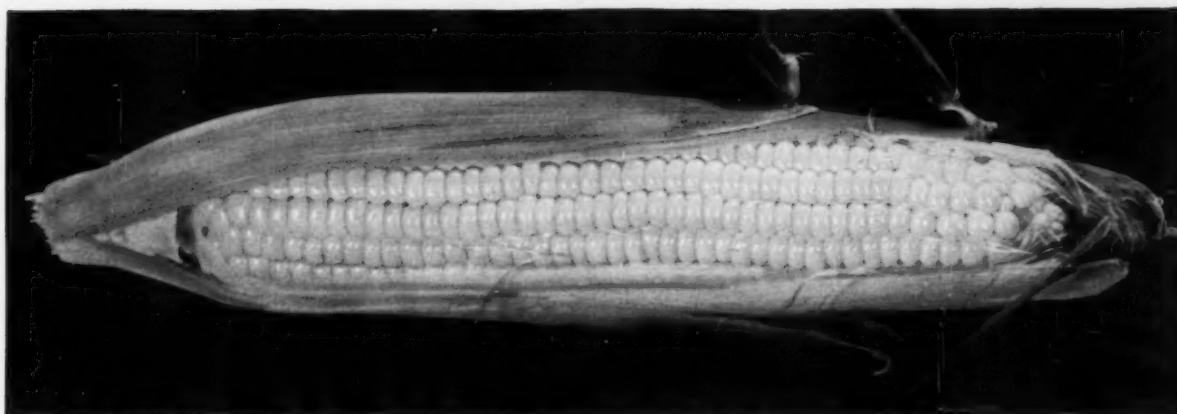
VF145 does have the essential characteristics needed for mechanical harvesting. The vine is relatively small and compact with a fairly concentrated fruit set. The ripe fruit will remain on the vine in a sound condition longer than those of other varieties, thereby making it possible to obtain a high percentage of the total crop at one picking.

In limited tests conducted at Davis and in the Imperial Valley, VF145

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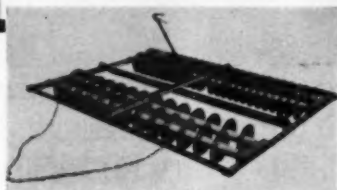
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set fruit at higher temperatures than other varieties. It should be adaptable for systematically scheduled plantings to obtain a continuous harvesting period.

The pH range compares favorably with other canning varieties but the percentage of soluble solids is somewhat lower than most other canning varieties. Larger fruit size would be more desirable for economical handling. For these reasons, it will probably be only an interim variety.

Seed will be available for field testing this year. Because VF145 has not been widely tested to establish its performance in all tomato-producing areas of the state, plantings by growers this year will be beneficial in developing superior varieties.

## CABBAGE

### Resists Clubroot

A SERIOUS problem in many cabbage growing areas is clubroot—a soil-borne fungus disease that causes plant roots to become abnormally enlarged, causing the plants to become stunted and eventually to die. Until now, no cabbage has shown any resistance to the disease.

Badger Shipper, a new variety released co-operatively by USDA and Wisconsin Agricultural Experiment Station, has shown resistance to strains of clubroot most prevalent in the United States. It is also resistant to yellows.

Heads of Badger Shipper are about the same size as those of

**HURRY! HURRY!! HURRY!!!**

You have exactly until February 15, 1961, to send us your order for the Vegetable Seed Varieties listed on page 15 of the January issue of **AMERICAN VEGETABLE GROWER**. Take advantage of this opportunity to try some of the latest varieties on a trial basis by filling out the coupon accompanying the listings, enclosing your check, and mailing to us IMMEDIATELY.

Badger Ballhead and are ready for harvest about the same time as Globe. The heads are globular to very slightly oval, and the outer leaves are smooth, bluish-green, and have medium frilled margins. Leaves are crisp and have a mild to sweet flavor.

It is recommended that growers test-plant small quantities of Badger Shipper to check its resistance and suitability in specific areas.

**AMERICAN VEGETABLE GROWER**

# Corneli Introduces Keystone Resistant Giant Strain 3 The New Bell Pepper That Is Better Than The Best



## Greater Seedling Vigor — Earlier Maturity — Heavier Production

Shortly after its introduction, the original basic Keystone Resistant Giant Pepper swept the country—took the lead in important pepper growing areas. Now, new Strain 3 has been produced—a pure line developed from an extremely vigorous plant selected on the Corneli breeding farm in 1956. This new strain is already tested and proven superior to others in its class—ranked first in the important pepper trials at Faison, North Carolina in 1960.

Strain 3 retains these basic characteristics which won the approval of growers everywhere.

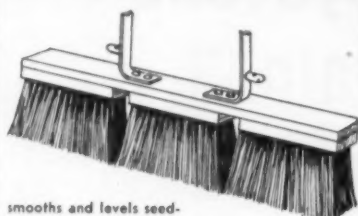
- Mosaic Resistant
- Heavy Foliage Which Protects Pods From The Sun
- Strong, Upright Stems Which Carry Heavy Loads Of Fruit

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smooths and levels seed-beds as well as smoothing harrows costing 10 times as much.

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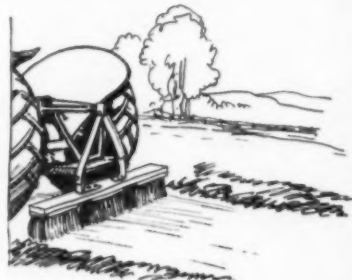
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EXPLOSIONS  
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## PLANT GROWER'S CORNER

Dr. Sheldrake, who inaugurated "Plant Grower's Corner" last year, is on sabbatical leave from the Vegetable Crops Department at Cornell University, Ithaca, N. Y. He is touring the United States studying plant growing structures and methods. He is especially concerned with plastic greenhouses and will report many interesting observations of his trip in this column which will run through June.—Ed.

### They're Here to Stay

**I** BELIEVE we can safely say that the plastic greenhouse is here to stay. In certain areas of California, acres of plastic houses span out in every direction. Most of the acreage is devoted to the production of chrysanthemums and carnations.

It is not uncommon to find one operator with as much as 10 acres of plastic houses. These houses are practically all covered with polyethylene. Most of the houses are covered from October until May. The beds of mums are then covered with cheesecloth for shade and cooling.

Most of the ranges are of the ridge and furrow type—not recommended in snow country. If used in areas of heavy snow, some means of rapidly melting the snow out of the furrows would have to be provided, plus extra support in the furrow area.

Rafter spacing is farther apart than is generally recommended in the East. It is common to see rafters spaced from 5 to 8 feet apart. A 2x2½-inch wire mesh called "permanetting" is put on first and the polyethylene is rolled over it. A second layer of permanetting is used over the film to sandwich in the plastic.

Eastern growers have successfully used 4-foot rafter spacing with 4- or 6-mil film without using wire mesh. One saving feature of this method is the advent of fan cooling. Usually the poly is loosest during bright hot days—a period when the fan will be run-

ning constantly. This fan action creates a negative pressure or vacuum in the house and tends to suck in the plastic and keep it from flapping.

Western growers use covering lath or strips wider than the rafters or other supporting members. At the Desert Sunshine test station in Phoenix, Ariz., it has been proven that the films will always fail first over the supporting members. If a wider wood or cardboard strip is used over the points of attachment, considerably longer life can be obtained.

One large mum plant growing establishment feels that they get two or three months longer life when they use covering strips that protrude at least ¼ to ½ inch over the sides of the rafters. Although many western growers use cut strips of corrugated boxboard, this material would work well only in areas of low rainfall and humidity.

Research is now being conducted in several states on air-supported greenhouses. With the advent of 40-foot seamless polyethylene, one can readily see houses of considerable size going up with very little carpentry needed. I plan to follow this research and will report any new developments from time to time.

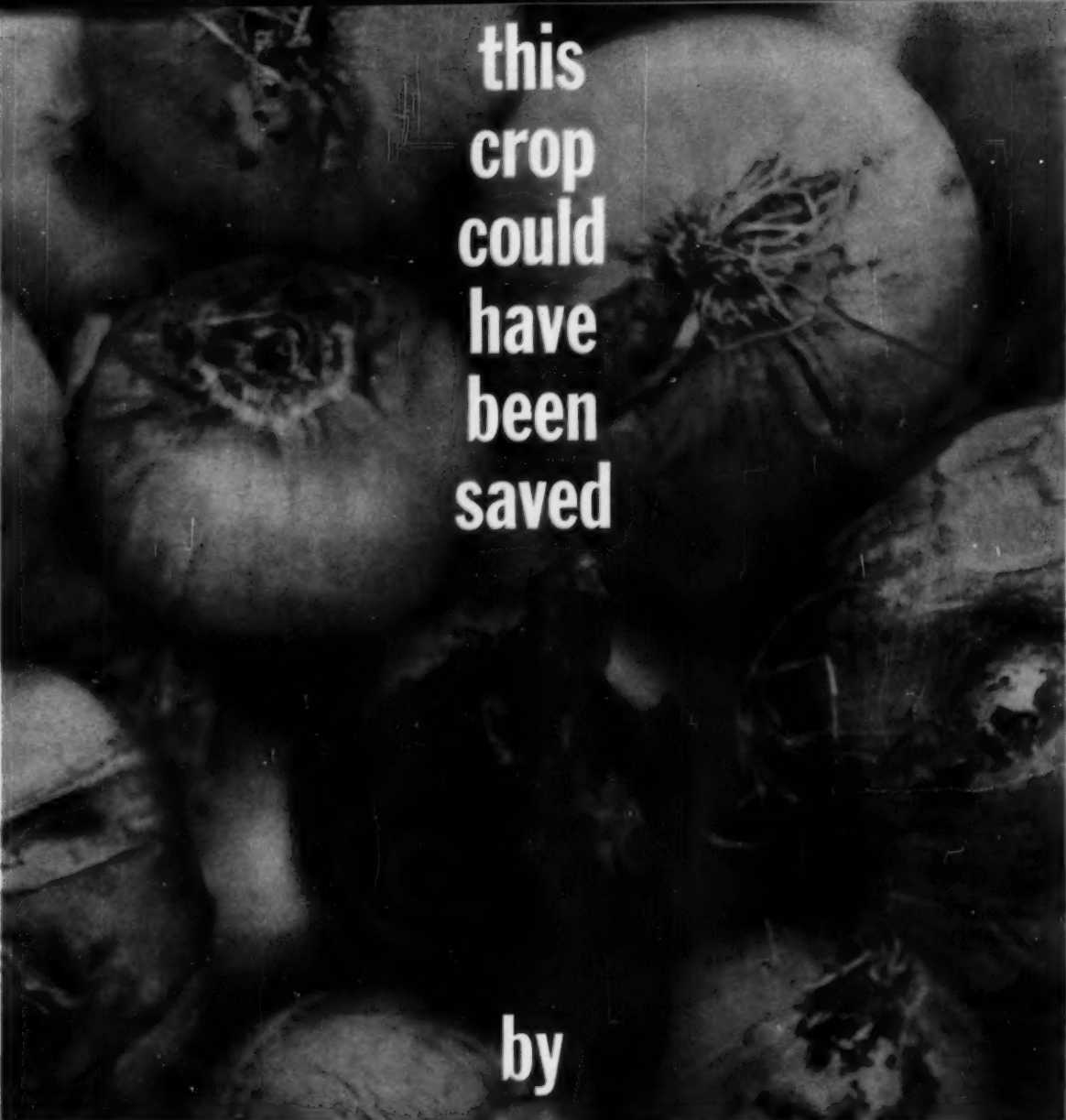
Tests are also being conducted using the new "longer lived" polyethylene released by several companies. Generally, these new materials seem to last about three times as long as regular polyethylene. Cost of the new plastic will be 20 to 30% more than standard film. A new development in low-cost film is the sale of unfolded film in widths up to 12 feet wide. Folds are still causing breakdown under some applications and the advent of unfolded film should eliminate this situation.

Considerable interest is being exhibited in the Southwest in the pro-



Ten acres under plastic in California. Houses have wider rafter spacing, wire mesh over film.

AMERICAN VEGETABLE GROWER



this  
crop  
could  
have  
been  
saved

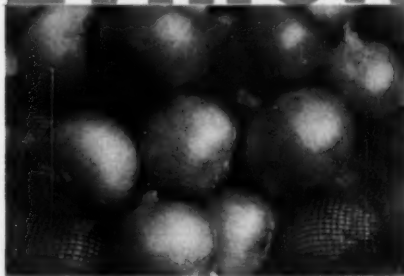
by

ETHION

***New Insecticide Controls Resistant Onion Maggot***

This year the onion maggot poses a severe threat. A strain resistant to previously effective insecticides has developed in most onion growing areas. The older materials no longer do the job, and using them means risking heavy losses.

You need ethion, Niagara's new chemical discovery, which is registered for use on dry and green on-



This photo courtesy of Agrow—Associated Seed Growers, Inc.

ETHION

Technical Chemicals Department  
Niagara Chemical Division,  
Food Machinery and Chemical Corp.  
Middleport, N. Y.

ions. Applied as a furrow treatment at planting time, it gives excellent control of onion maggots, including the resistant strain.

Ethion is available in a free-flowing granular formulation. It can also be used in combination with thiram to control both onion maggot and smut.

Don't gamble on tough-to-kill maggots this year. Contact your dealer or formulator for ethion and details on how to use it.

Many formulators and their dealers now have ethion in stock. Others are being added rapidly. Write for the name of your nearest outlet.

# Now Use SEVIN at the New Low Price

**Boost your profits on vegetables** this year by using SEVIN insecticide to control major insect pests the effective, economical way. The new low price of SEVIN this year gives you substantial savings on a practical spray or dust program. No other insecticide gives you all the money-making benefits you get with SEVIN: long-lasting control per application, a higher degree of safety in use, insect control right up to harvest and control of insects resistant to other pesticides.

**SEVIN** is outstanding against Mexican bean beetle, corn earworm, tomato hornworm and fruitworm, resistant Colorado potato beetle, Japanese beetle, leafhoppers and more than 20 important vegetable insect pests. When insects attack, it pays to SOCK 'EM with SEVIN!

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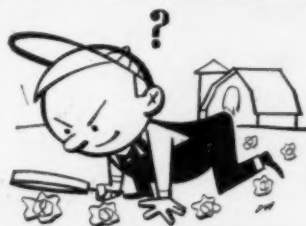
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duction of tomatoes out of season in low-cost plastic greenhouses. Like many new operators of plastic houses, they are trying to operate with insufficient heat and with very poor provisions for ventilation.

It is generally agreed that the tomato plant does not set fruit properly at night temperatures below 55° F. The potential looks excellent for this area if these growers will begin to follow accepted practices for this crop.

In building a plastic house, the grower must decide whether to use

## YOU be the EXPERT!



**I**t was a new greenhouse with new benches and flats. But the tomatoes and cabbage plants were in poor shape. Ray Evans couldn't understand why those plants on the outside edges of each flat were stunted while those in the middle appeared normal. The only good plants in the house were those in several old flats.

All the soil had been sterilized and fertilizer added in accordance with a soluble salts test.

Someone suggested that the wood preservative used on the new flats could be responsible. But Evans pointed out that he had used the same material for years to treat fence posts. What is your diagnosis?

Answer on page 51

one or two layers of polyethylene. Dr. R. W. Langhans and I recently completed two years of work at Cornell comparing one- and two-layer houses and the two-layer house, properly built, will cut your heat requirements over 40%. In a one-layer house it will require about 14,000 Btus for every 1000 square feet of exposed surface area for every 10 degrees difference between inside and outside temperatures. If you install two layers in order to create a dead air space, it will require only 10,000 Btus to do the same job. The space between the layers should not be over 2 inches and not less than 1 inch or the layers will touch.—Ray Sheldrake.

AMERICAN VEGETABLE GROWER

# MARKETS...

## TRENDS AND FORECASTS

### *Special Report*

AMERICAN VEGETABLE GROWER, FEBRUARY, 1961

FOLLOW USDA PRODUCTION GUIDES. These guides are designed to take the guesswork out of planning grower production. They are the best estimates of how much growers can sell at a profit--and how many acres they will need to grow it.

PRICES OF FRESH VEGETABLES. These will continue to range somewhat below last winter barring severe weather upsets in southern producing areas. Supplies of canned vegetables are continuing to move into consumption at a good rate and at good prices.

ONION YIELDS SET NEW HIGH. Average onion yields set a new record of 331 cwt. per acre in 1960. Production will have to be trimmed by at least 10% next year to result in fair prices.

ONION GROWERS' WITHHOLDING PROGRAM OUT. Attempts at cooperative withholding of 15% of this winter's stored crop did not work out. The plan, however, did appear to bolster sagging onion prices somewhat during December and through January.

MARKET ORDERS FOR ONIONS. These are being hinted at in many producing areas. A rigid national plan could raise prices for growers through controlled supply. But, the use of a few individual state or local orders would likely give little help. Growers will have to cut production in all areas.

FARMERS BUYING TO INCREASE EVEN THOUGH FARMS BECOME FEWER. By 1970 farmers' capital needs will increase, purchased inputs will increase, management level required will increase, while total land needed for production will decrease. These are predictions of USDA economists.

EXPECT NEW LABOR LEGISLATION IN 1961. Mexican labor program comes up for renewal. Unions want the program stopped. This would tighten labor supply, forcing farmers to pay more. Other proposals likely are: Registration of migrant labor crew leaders, health and accident coverage of migrants, federal aid for migrant housing and education, plus new regulations on transportation.

THE VEGETABLE INDUSTRY IS PREPARING A STAND. There is evidence of pooling of resources and leadership to resist union control of farm labor. Growers want a liberal supply of labor at moderate wage levels and no unionization. But, given better farm prices, most growers would be willing to pay higher wages.

FRESH VEGETABLE PRICES FLUCTUATE WIDELY. AMS economists explain why prices of some products fluctuate more. Peaks in production, seasonal changes in marketing costs, perishability, and distance to market are factors which affect degree of seasonal price swings.

PROCESSING HAS STABILIZED THIS YEAR'S POTATO MARKET. Competition among processors has firmed prices in spite of a large crop. Rumor is that in Idaho 60% of this year's crop will be processed. Fresh market growers should begin thinking about the long-range effects of processed potatoes on their market outlets.

WESTERN POTATO PROCESSORS HAVE EYE ON EXPANSION. To cut transportation costs and improve distribution several large western operators are scouting the Midwest and East for possible sites. Big questions raised are: Quality of raw product, ability to contract with growers, competitiveness of close fresh market outlets, and concentration of supply.

CUBAN VEGETABLE IMPORTS CONTINUE. In spite of recent developments, winter vegetables from Cuba are coming in. An embargo would require an act of Congress, cancellation of Cuban Trade Agreement or invoking the Trading with the Enemy Act. All these are unlikely or would require considerable time to be brought into effect.

# STATE NEWS

## WASHINGTON, D.C. Will They Become Laws?

**G**ROWERS, still angered at the unjust presentation of the migrant labor situation on the ill-famed television program "Harvest of Shame," are watching closely the proceedings of the U. S. Senate as the Senate Sub-Committee on Migrant Labor prepares to present its full report.

Senator Harrison Williams, Jr., of New Jersey, chairman of the committee, gave a preview of the report at the second annual conference on "Families Who Follow the Crops," held recently in San Jose, Calif. He said the Sub-committee would make the following recommendations:

Education for children of migrants.

Summer school grants for children of migrants.

Hygiene education for adults.

Crew leader plan for recruiting workers.

Minimum age of 14 for migrant worker.

Unemployment compensation.

Minimum wage of 75 cents per hour, plus graduations of the hourly wage on geographical areas, plus a piece rate system.

A program of housing loans to public agencies or private purchase assistance, much like F.H.A.

Child welfare and health programs.

The Sub-committee is also studying the motivation behind the migrant work force and how this labor force might become more stabilized. Senator Williams reports that the Sub-committee will continue to study the feasibility of such proposals as the establishment of specific employment categories and the recruiting of workers by the federal government, including instructing these workers in the various skills involved in diversified farm work.

## FLORIDA

### Guaranteed Wages

**F**OR the first time in history, the U. S. Department of Labor has placed 30,000 migrant farm workers in south Florida under a guaranteed wage plan. The wage scale, based on recent surveys, varies according to

the farming area and crop involved. But it is generally about 60 cents an hour.

Highest hourly rate set was in Dade County, where pre-harvest work and harvesting of trellis tomatoes was placed at 75 cents an hour. Cultivation and harvesting of other vegetables was set at 60 cents an hour in Dade. Piece rates were set for ground tomatoes at 10 cents a bucket; pole beans, 50 cents a hamper; and limes, 25 cents a box.

Areas placed under the prevailing wage scale include Dade County, the big farm labor belt around Okeechobee, the Pompano area in Broward County, and the trellis tomato section in the eastern half of Palm Beach County. Surveys will be made at Immokalee and in Lee County at a later date to set wages in those areas.

In announcing the new plan Bryan Page, assistant chief of farm recruitment of Florida State Employment Service, said: "This is not part of the minimum wage law, but a plan of guaranteeing interstate workers with a prevailing wage."

## TEXAS

### The Latest Dope

**T**OMATO growers in the Rio Grande Valley will be well informed this year on the latest acreage and marketing developments. USDA is releasing weekly acreage reports to help Valley growers in

## CALENDAR OF COMING MEETINGS AND EXHIBITS

**Mar. 1**—Vegetable Pest Control Equipment Clinic, Knights of Columbus Hall, Utica, Mich. — Lane Rushmore, County Extension Agent, Mount Clemens, Mich.

**Mar. 5-8**—Watermelon Growers and Distributors Association annual meeting, Seville Hotel, Miami, Fla.—J. J. Parish, Sec'y-Treas., Adel, Ga.

**Mar. 12-15**—Potato Growers Association of California and Arizona, Bakersfield Inn, Bakersfield, Calif.—Francis P. Pusateri, Exec. Mgr., P. O. Box 83, Bakersfield, Calif.

**Mar. 20-23**—National Conference on Handling Perishable Agricultural Commodities, Purdue University, Lafayette, Ind.

**Mar. 27**—Michigan Vegetable Growers Supply and Equipment Show, Detroit Eastern Municipal Market, Detroit.—Edgar C. Kidd, County Agent, Box 552, Wayne.

**June 19-24**—Pacific Division American Association for the Advancement of Science, University of California, Davis.

**Oct. 1-4**—Produce Packaging Convention and Exposition, Chase-Park Plaza Hotels, St. Louis, Mo.—Robert L. Carey, Exec.-Sec'y, Produce Packaging Association, P. O. Box 29, Newark, Del.

making decisions on reducing or increasing their acreage.

Questionnaires were mailed to growers asking for figures on their 1960 acreage and production. This information is used as the basis for the weekly estimates of Valley acreage planted to tomatoes for this year's spring harvest.

The weekly reports also include information on weather, growing conditions, state of growth, and date of prospective harvest. During the harvest season, marketing news will be added.

## NEW JERSEY

### Need for Stronger Co-ops

**"G**ROWERS must take over more of the preparation and processing of farm products if they are to receive a fair share of the consumer's dollar."

This was the warning Ronald N. Goddard, marketing director. Co-operative Grange Federation Exchange, Inc., Ithaca, N.Y., gave growers attending the annual convention of Co-operative Marketing Associations of New Jersey, Inc., held recently in Buena.

Goddard recommended that farmers retain control of their products until they reach the retail store. Stronger co-operative associations might help to retain this control.

Victor Lenco, Robbinsville, was re-elected president of the association. Other officers re-elected were Joseph Maccarone, Swedesboro, first vice-president; Clayton H. Stains, Flemington, second vice-president; Thomas B. Kirby, Glassboro, treasurer; and Paul N. Taylor, Millville, secretary. David T. Sheppard, Cedarville, was elected third vice-president.

**Value of fruit and vegetable sales** in the Garden state in 1960 was \$9,563,000 compared to \$9,095,000 in 1959. Because of the switch by seven of the co-operatives from auction to negotiated sales, non-auction sales accounted for almost \$2 million more than in 1959.

## GEORGIA

### Back to School

**G**ROWERS in the Peach state are getting an opportunity to return to the classroom. Abraham Baldwin Agricultural College, Tifton, has



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*...when you use this modern styled packaging  
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You'll give your fresh tomatoes and produce that plus appeal when you send them to market in packages that tenderly protect and maintain their fresh quality and appearance.

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Select from this complete line of 2, 4, 8 and 12 quart baskets. Wood or wire handles optional; shipped flat; fast, easy set-up. Also consumer size prepacks.



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save time, spray materials,  
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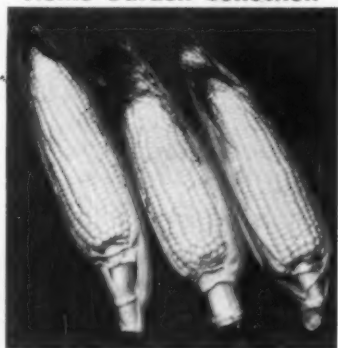
## NEW! John BEAN AIRCROP ATTACHMENT

Convert your high pressure sprayer into an efficient, air-type unit with John Bean attachments. Whether you choose the new 20-RC or one of the other two Aircrop attachments, every one gives you thorough, uniform crop protection and greater rate-of-work capacity with real savings in time and spray materials.

Ask Your Dealer to Demonstrate the Aircrop Attachment That's Best For Your Needs



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### BUTTER SWEET 199 HYBRID CORN

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HYBRID SWEET CORN, Butter Sweet 199.....	25¢
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LETTUCE, Butter head type, Sweetheart.....	20¢
RADISH, Champion.....	20¢
ONION, Early Red California.....	20¢

Our complete 1961 catalog of 52 pages, mailed FREE upon request. The above varieties are described.

**Gill Bros. Seed Co.**  
Montavilla Station,  
PORTLAND 16, OREGON

scheduled one-day courses on watermelons, February 16, and on southern peas, March 1.

Dean Tom Cordell reports that the programs will include the latest research findings and successful grower practices. Courses on market management and bush and lima beans were held earlier this year.

Write to Dean Cordell for a copy of the program and details on enrollment.

## CALIFORNIA

### A Price Hike They Like

**T**OMATO growers in the Golden state are happier these days. Leading canners, now signing acreage contracts for 1961, are guaranteeing to pay not less than \$25 a ton—\$2.50 a ton higher than contracts with California Tomato Growers Association last season. The tentative agreements at \$25 a ton would be open to upward revision provided the present strength of tomatoes and tomato products continues.

Threat of a wholesale shift to sugar beet plantings prodded the canners into early action. There will be no acreage limitations on sugar beets this year.

## SOUTH DAKOTA

### Fletcher Heads Spud Group

**W**AYNE FLETCHER, Garden City, was re-elected president and re-elected to the board of directors of South Dakota Potato Growers Association at the annual meeting held recently in Watertown.

Also re-elected were Jack Hanson, Garden City, vice-president; Howard Robb, treasurer; and John Noonan, Watertown, secretary.

The growers heard 10 speakers discuss a variety of subjects from potato diseases to paper potato bags. Noonan recalled that in 1922 when the association was formed, there were 110,000 acres in potatoes in South Dakota. Today the state has only about 8000 acres in potatoes each year.

## OREGON

### Doubling Tomato Yields

**P**OLYETHYLENE mulch doubled yields of marketable tomatoes in tests conducted at Oregon State College Agricultural Experiment Station, Corvallis. Yield was over 20 tons per acre compared to about 10 tons per acre without mulch.

Other tests conducted at Corvallis showed use of polyethylene mulch also increased marketable yields of pole beans and cantaloupes. The physical properties of the film can



You're your own weatherman when you have Rain Bird Sprinklers, for they give you water where you want it, when you want it, as you want it. No need to let blue skies make you blue! Rain Bird Sprinklers are specifically engineered for farm use. They're rugged, reliable, and practically service-free, for Rain Birds have a minimum of moving parts.



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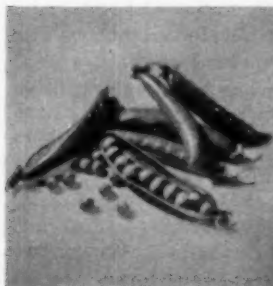
Fast-acting, water-soluble Sul-Po-Mag triggers top-grade responses

Upgrading your vegetable quality can be a solid source of extra profits just as greater yield from every acre returns more dollars. Fortunately, growers can get a

custom-tailored vegetable fertilizer formulated to do this quality/yield job well! The key ingredient: Sul-Po-Mag — granular, double sulphate of potash-magnesia — water-soluble to speed deep root expansion, improve top growth and color.

Just how effective is Sul-Po-Mag? These official test results give you a good idea. In Cornell tests, sweet corn showed a 15.6% rise in yield with magnesium added. Potato yields jumped 15% when half the potash was derived from Sul-Po-Mag. Delaware field trials with 4-8-12 and Sul-Po-Mag on lima beans scored a 152% increase in yield. In New York tests, tomatoes produced \$130 more crop value per acre over non-magnesium fortified fields.

Take action with Sul-Po-Mag! Ask your dealer to add premium Sul-Po-Mag to your mixed fertilizers or ask him to supply Sul-Po-Mag for direct application.



**PEAS** — In University of Wisconsin tests, Sul-Po-Mag greatly improved the tenderness of peas. Granular Sul-Po-Mag sustains growth over the season to produce top yields.



**CABBAGE** — This crop and other vegetables improve in weight, size, color, sugar content when fed with Sul-Po-Mag. It contains magnesium, potash and sulphur.



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For the largest and best keeping, open-pollinated line of Spanish Onion, we recommend the "M" Strain. It will outyield any other open-pollinated variety. Order now as supplies are limited.

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PRODUCT  
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**BERLIN CHAPMAN  
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Overall length 12'6". Overall width 2'7". Overall height 4'9".

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be varied to raise or lower soil temperatures, conserve soil moisture, and control weeds and plant disease. The increases in marketable yields more than justify the cost of the mulch.

The importance of polyethylene mulch can be shown by the fact that 33 land grant colleges are now carrying on, or have recently completed, research projects on polyethylene mulch materials.

## MARKETING

### Try Again?!

**N**ATIONAL Onion Association's plan to achieve a more orderly marketing of onions has failed. As reported in January, a program had been initiated to buy 15% of the nation's stocks-on-hand with purchase contracts between individual holders and United Onion Growers Co-operative Association. A goal was set at 2,100,000 bags.

It was stipulated that the contracts would be null and void unless 75% of the reserved stock quota (2,100,000 bags) was committed by signed contract to United Onion by January 1. The required 75% sign-up was not achieved.

Although the 15% project failed to win approval, Jack Rose, executive secretary of NOA, pointed out one value of the program was the development of high interest in marketing agreements throughout the industry. Early in the project, it was evident that onion growers and shippers in many areas were concerned enough about the surplus problem to go ahead with determination to set up marketing agreements and orders.

### Packaging Tests

**A**SPARAGUS prepackaged in polyethylene bags or sheets helps bring the product to the consumer in succulent, crisp, and tender condition, reports USDA.

Test shipments of asparagus from California to eastern markets showed the prepackaged asparagus had less weight loss in storage and transit than bulk-packed asparagus.

Shipments were made in conventional bulk pack, perforated polyethylene bags which were fully closed, bags with open tops, and sheets of polyethylene film. It was found that asparagus in closed bags developed off-odor and off-flavor when not kept well refrigerated.

In another test, the inedible white butts were cut off to determine the feasibility of lowering transportation

AMERICAN VEGETABLE GROWER



## Low-cost International® B-275 Diesel works for less than a dollar a day for fuel!

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Call your IH dealer. He'll make all arrangements for you to try a new B-275 on your farm.

\*Belt hp corrected to standard conditions.

Trade now for your new B-275, the tractor used by first, third, and seventh place winners in the 1960 World Plowing Contest, Rome, Italy. See your IH dealer. Get full details on IH Early Trader's Bonus. The sooner you trade . . . the more you save!



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Year after Year**



**Re-Usable  
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Larger and taller — Durable and Weather-Proof

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Larger Flange Prevents Being Blown Away

**Gain the Advantages of Plastic at a Comparable  
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Protects from Frost, Wind, Sun, etc.

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### SAVE TIME SAVE LABOR Do a BETTER and FASTER job of SPRAYING and DUSTING

with our KWH shoulder mounted MIST-BLOWER and DUSTER, powered by gasoline engine (1 and 3 HP Models).

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**Buffalo Turbine  
Offers you the  
Finest in Turbo  
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Use Buffalo Turbine Equipment For



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## Troyer's "ADVANCED" UNIQUE AUTOMATIC SEED CUTTERS



COMBINATION CUTTER SHOWN

No-Cuts, 2-piece, 3-piece, 4-piece  
and Jumbos

Doing what many said could not be done just a few years ago. We believe this to be the most outstanding machine of its kind on the market. It cuts 2 piece, 3 piece and 4 piece seed pieces. It sizes out 5 different sizes. "No-Cuts" can be bagged separately or

mixed with other seed pieces. All seed pieces can be bagged with the one set of baggers at end of cross conveyor. "Jumbos" bagged separately. Other models—splitters, 4 piece cut and seed piece treaters—are available.

See your nearest dealer or write directly to us.

## TROYER MANUFACTURING COMPANY Smithville, Ohio

Troyer Mfg. of the Valley, East Grand Forks, Minn.

costs by reducing shipping weight. However, the all-green stalks developed decay much faster.

Agricultural Marketing Service is planning additional tests of prepackaged asparagus in coming seasons.

### Magic Formula

**A**RE you looking for a magic solution to your marketing problems? Brussels sprouts growers in the Golden state think they have the answer to overproduction and fluctuating demand.

The Brussels sprouts crop is now moving to the processor under a marketing order that has surplus control provisions based on a pre-planting allocation—the only such marketing order in California.

**Here's how it works.** Allotments are made to growers who have established a base on the number of acres they grew the previous season. There is also a base on average yield per acre.

When the Brussels Sprouts Marketing Program Committee has set the season's goal for the frozen pack, a certificate is issued to each grower, showing the number of tons he is entitled to deliver for freezing. This certificate carries a fee which is used to take care of administration expenses. Last season growers voted to add an additional fee for a publicity program to stimulate trade.

Any processor freezing Brussels sprouts must have in his possession certificates equal to the number of tons he has received for processing.

**Success of the publicity program** may be evaluated by the results of the 1959-60 season. The goal established by the committee for the 1959-60 season was 33 million pounds. According to USDA, frozen Brussels sprouts sales last year totaled 35 million pounds. The difference was taken out of the packer's inventory.

Not only has the marketing order provided a supply of frozen Brussels sprouts that will meet demand without creating a surplus but it has improved prices received by growers.

Alfred L. Perry, manager of the marketing program, pointed out that before the program went into effect the price varied from 8 cents at the beginning of the season to 3½ cents at the close of the season. In 1959-60, growers received 9 cents per pound.

**The 1960-61 season goal** has just been established by the 11-man marketing program committee. Because of increased demand the 1960-61 goal has been established at 37,830,000 pounds or about 7% more than the 1959-60 allotment. Price per pound will be 10 cents.

Perhaps the Brussels sprouts growers in the Golden state haven't

**NOW . . .**

**LOW-COST  
HIGH QUALITY**

**PLASTIC POTS**

from **BIRD**



Wonder where your next plastic pots are coming from? How much they'll cost? When you'll get delivery? If they'll stand up under rough use? Then standardize on the new Bird Plastic Pots for *dependable* quality and service.

Bird Hi-Strength Plastic Pots are made from pure polystyrene. They are made to Bird's high standards of quality. They are available through a dependable source — your Bird Distributor. Their prices are stable — no variations from one shipment to the next.

Rugged rim and quality construction assure strength and durability. Pots are designed for maxi-

mum nesting — yet are easily separated due to interior stacking lugs. They are presently available in four sizes — 3½", 4", 4½", and 6" Bulb Pan, all in utility color. Prices given below are suggested resale prices. Check your distributor for delivered prices, or write for literature on all Bird Containers to Dep't AVG.

**SUGGESTED PRICES  
(Per M)**

3½"	4"	4½"	6" (Bulb Pan)
\$22.50	\$27.25	\$38.00	\$75.00

*Quality Products Since 1759*  
FLOOR COVERINGS • ROOFING & SIDINGS  
CORRUGATED & PAPER BOARD BOXES  
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EAST WALPOLE  
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**GROW MORE PROFITS WITH BIRD CONTAINERS**



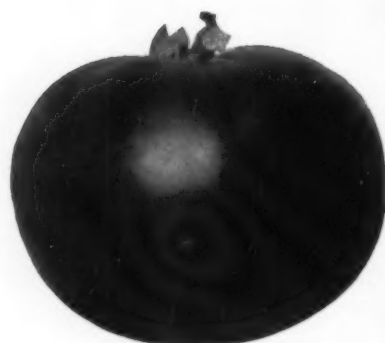
known world-wide for quality!

## SENECA Sweet Corn Hybrids

**SENECA SUNBEAM**—Early—Cold Resistant.  
**SENECA ARROW** —Midseason—Seneca Chief Quality.  
**SENECA BRAVE** —New—Two eared—Heavy yielder.  
**SENECA CHIEF** —Highest Quality—Best for Freezing  
 —Customers ask for "Seneca Chief."

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 BOX 641 HALL, N. Y.

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**1961  
 SEED  
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## PRICE LIST for Commercial Growers

A complete listing of the very finest varieties of Vegetable and Flower Seeds. Nearly 50 years of research, testing and improving of strains have proved Burgess "Blizzard Belt" seeds to be the finest obtainable.

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Write for your free copy today from America's leading Tomato Seed Specialists.

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 BOX 91-W, GALESBURG, MICHIGAN

## S & H Set Onion Planter



S. & H. Set Onion Planter.  
 Saves work of 20 men.  
 Plants onion sets and small bulbets. Does away with costly hand planting.

Also Gang Planters:  
 One, Two, Three and Four Rows.  
 Write for Folder.

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*Sus siembras de tomate, chile, pepino, fresa, tabaco, algodon, citricos, Etc., Etc., le darán mayores utilidades si son tratadas con:-*



## KING FISH "Guano Liquido"

**FERVE, S. de R. L. de C. V.**  
 Ing. Eduardo J. Fernandez, Gerente  
 Bravo 202 Nte., Tel. 10-08  
 Culiacan, Sin., Mexico

**K. C. MATTSON CO.**  
 2460 N. Chico Ave. El Monte, Calif., U.S.A.

solved all their marketing problems but through co-operation they have steadied their market and increased their price.

## A New Look

**CAULIFLOWER** shipped from New York's Genesee Valley last season were sporting a new look. The heads were trimmed and wrapped in an attractively printed cellophane overwrap. Before being wrapped the



King holds a cellophane-wrapped head of cauliflower, washed, trimmed, and ready for display.

heads were put in a hydrocooler which dropped the average 70° F. field-heat temperature of the cauliflower to a 40° F. wrapping storage level.

The new look was initiated by the Genesee Valley Regional Market Authority and its sales agency, Long Island Cauliflower Distributors, Inc. Joseph P. King, administrator of the authority, reports chief reasons for prepackaging the cauliflower were prospective savings in transportation costs and greater convenience for both store and consumer.

Reaction to the new look has been excellent. As King pointed out, through centralized packing and uniform control of quality, the growers are offering a product that's specifically designed for efficient, easy merchandising in supermarkets.

## EXCLUSIVE!

### The Genuine MECHANICAL TRANSPLANTER with

- \* PATENTED AUTOMATIC FLO-CHECK WATER VALVE WITH "MAGIC AIR CONTROL"
- \* SETS MORE PLANTS PER HOUR
- \* SETS THEM 100% PERFECT TOBACCO, SWEET POTATOES, LETTUCE, STRAWBERRIES, ETC.



Write for Latest Information  
 on Transplanting, also Price  
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**NEW!**  
 Peat Pot Planter  
 Also Available

**MECHANICAL TRANSPLANTER CO.**  
 CENTRAL AT U.S. 31 HOLLAND, MICHIGAN



### FEATURES

- POSITIVE ACTION NEOPRENE GRIPPERS
- QUICK-CHANGE SPACING
- BRONZE OILITE MAIN BEARINGS
- ADJUSTABLE PLANT TRAYS
- TRACTOR MOUNTED OR DRAWN MODELS



Photos courtesy: DuPont

Hydrocooler drops field heat from average 70° F. to 40° F. before heads are wrapped in cello.

AMERICAN VEGETABLE GROWER

## They're Kitchen Tested!

"THE most sophisticated marketing adventure in the history of the industry." That's what one USDA official termed the new promotion program initiated by Wisconsin Potato Growers Association. Not content to sit back and let their product do all the selling, these enterprising growers are co-operating with Wisconsin Department of Agriculture and University of Wisconsin home economics department in a new consumer service.

Grower samples of Russet Burbank, Russet Sebago, White Sebago, and Katahdin will be laboratory tested for cooking quality, dry matter content, and color gradation after cooking. If the growers' lot samples

meet the standards set forth by the testing laboratory, the federal-state inspection department will approve the lot for labeling as "kitchen tested."

Transparent stickers on consumer packs will tell Mrs. Housewife that these potatoes meet the rigid cooking quality tests and are recommended for baking, french frying, or mashing; boiling, scalloping, or creaming; or American fried or salads. And a postage guaranteed card will be inserted in each pack so Mrs. Housewife can report her reactions to the pack.

To finance the program in part, each grower will pay \$5 to the testing laboratory for his initial sampling and \$3 for each subsequent sampling test. All samples tested at the labora-

tory in Antigo will be coded and handled through the federal-state inspection department in conjunction with its regular grade and size inspection work. The "Kitchen Tested" labels can be applied only to U. S. No. 1 federal inspected potatoes.

## Modernization Urged

IN a keynote address before the 17th annual convention of Florida Fruit & Vegetable Association at Miami Beach, Charles Ruth, produce merchandiser for Marsh Supermarkets, Yorktown, Ind., said growers and shippers must modernize their methods if they want to be in business tomorrow.

Ruth praised the growers for research in production, packaging, and

## GET PLUS PROFITS FROM HEALTHIER PLANTS!

Grow the Sales-Making Combination . . . Vaughan's

Varieties in Val-Peat Pots

## VAUGHAN'S VAL-PEAT POTS

Ideal for Tomatoes, Peppers, Cucumbers, Melons, Egg Plant . . . In fact, wherever transplanting is desirable, because you transplant pot and all and eliminate shock and root damage. Provide a steady supply of balanced nutrients for good growth. You water less often; they hold

moisture and their porosity permits good root aeration. Bases are wide to prevent tipping. Made sturdier to last longer despite handling. And they are full-dimensioned to hold more soil.



**VAL-PEAT POTS—STANDARD:** Heavier-walled than the LIGHTWEIGHT No. 10, the standard is vitally needed for crops with longer periods of growth in the pot. They are sturdier, have the strength and life to withstand handling without loss.

Size: Top INSIDE Measurement	Quantity	Price per 1000	Price per case	Pots per case	Case Weight
<b>S-1700 A</b> 1 3/4-in. Square	3,000 to 27,000 30,000 to 72,000 75,000 and UP	\$ 7.20 6.70 6.00	\$21.60 20.10 18.00	3000	30 lbs.
<b>S-1700 B</b> 2 1/4-in. Round	3,000 to 27,000 30,000 to 72,000 75,000 and UP	\$ 8.60 8.00 7.40	\$25.80 24.00 22.20	3000	44 lbs.
<b>S-1700 C</b> 2 1/4-in. Square	2,000 to 26,000 28,000 to 72,000 74,000 and UP	\$10.80 9.90 9.00	\$21.60 19.80 18.00	2000	39 lbs.
<b>S-1700 D</b> 3-in. Round	1,000 to 14,000 15,000 to 35,000 36,000 and UP	\$14.90 13.90 12.90	\$14.90 13.90 12.90	1000	27 lbs.
<b>S-1700 E</b> 3-in. Square	1,000 to 9,000 10,000 to 24,000 25,000 and UP	\$18.90 17.50 16.10	\$18.90 17.50 16.10	1000	39 lbs.
<b>S-1700 F</b> 4-in. Round Std.	500 to 4,500 5,000 to 12,000 12,500 and UP	\$29.75 27.75 25.75	\$14.88 13.88 12.88	500	30 lbs.
<b>S-1700 G</b> 4-in. Azalea	500 to 4,500 5,000 to 12,000 12,500 and UP	\$29.75 27.75 25.75	\$14.88 13.88 12.88	500	30 lbs.

**VAL-PEAT POTS—LIGHTWEIGHT No. 10:** Made especially for those crops which require a short time between potting to transplanting. The thin wall assures rapid root penetration.

Size: Top INSIDE measurement	Quantity	Price per 1000	Price per case	Pots per case	Case Weight
<b>S-1705 A</b> 2 1/4-in. Round	3,000 to 27,000 30,000 to 72,000 75,000 and UP	\$ 7.50 7.00 6.50	\$22.50 21.00 19.50	3000	36 lbs.
<b>S-1705 B</b> 2 1/4-in. Square	2,500 to 27,500 30,000 to 72,500 75,000 and UP	8.10 7.60 7.00	20.25 19.00 17.50	2500	40 lbs.
<b>S-1705 C</b> 3-in. Round	1,250 to 15,000 16,250 to 35,000 36,250 and UP	13.30 12.30 11.30	16.63 15.38 14.13	1250	27 lbs.
<b>S-1705 D</b> 3-in. Square	1,200 to 9,600 10,800 to 24,000 25,200 and UP	15.50 14.50 13.50	18.60 17.40 16.20	1200	38 lbs.

Prices prepaid on all orders weighing 150 lbs. or more in U.S.A. except Hawaii and Alaska.

Add 5% to all prices for delivery in Washington, Oregon, Idaho, California, Utah, Nevada, and Arizona.

### Quantity Discounts:

Orders of \$1500.00—2% Discount  
Orders of \$3000.00—3% Discount  
Orders of \$6000.00—5% Discount

Various sizes may be combined to obtain quantity prices.

## VAUGHAN'S FAMOUS VEGETABLE SEEDS

Each of these varieties was carefully selected for overall quality and saleability. Produce unusually healthy, vig-

orous plants that excel in flavor, heavy yields and insect and disease-tolerance.

### YOLO WONDER PEPPER

The best of this variety: thick-meated, 4-lobed, deep-green color fruits. Packet 25¢: 1/2 oz. 60¢: Oz. \$1.10; 1/4 lb. \$3.35

### EARLY GIANT HYBRID TOMATO

Smooth, huge scarlet fruits. Prolific producer. Packet 50¢: 1/16 oz. \$2.50; 1/4 oz. \$4.50; 1/2 oz. \$8.00

### RESISTANT GOLDEN ACRE CABBAGE

Almost complete resistance to cabbage yellows. Firm, compact, 6-in. diam. heads about 3 lbs. Packet 20¢: 1/2 oz. 40¢: Oz. 65¢: 1/4 lb. \$2.00

# VAUGHAN'S SEED CO.

601 W. Jackson Blvd., Chicago 6, Ill.  
85 White St., New York 13, N.Y.



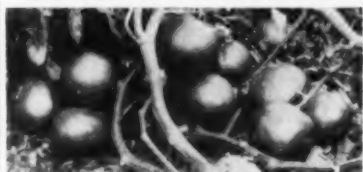
## Plants 'em all, large and small

Plant size is no problem when you use a Holland Transplanter. Holland's ingenious "all rubber gripper pocket" handles all transplants, regardless of size, with equal efficiency. What's more, the pocket opens on both sides—not just one. Feeding is faster and easier. Holland's "Start-Rite" water valve is virtually foolproof—gives your transplants a perfect start.

You save time and work, you actually plant more profits when you plant with a Holland—the transplanter that outsells all other makes combined. See them at your dealer's. Write for his name and your copy of our big new catalog.

**HOLLAND TRANSPLANTER COMPANY, Holland, Mich.**

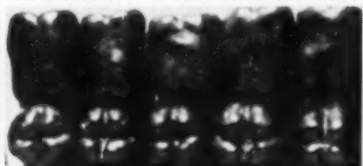
### BOUNTIFUL HYBRID



One of the best proven F1 hybrid tomatoes. Early, firm, crack resistant. Large size, superb quality, high yields. Adapted from Gulf States to Canada. Liked by experienced growers in all sections. Try Twilley's Bountiful Hybrid if you have been disappointed in other hybrids.

New, Mosaic Resistant

### WONDER GIANT PEPPER



New, first offered in 1961. Mosaic Resistant, more four pointed than the Yolo Wonder strains. Has the large size of California Wonder and Florida Giant. Compact plants; early for a big variety. High yields.

New, Fusarium Resistant

### QUEEN OF COLORADO



New Fusarium Wilt Resistant Queen of Colorado Cantaloupe. Vigorous vines; keeps well after picked. Fine appearance, delicious flavor, ideal market variety. Has good sales appeal on all markets.

OUR SPECIAL CATALOG lists 87 selected strains planted by growers in 30 states. Send for your FREE CATALOG WITH COMMERCIAL PRICES

**OTIS S. TWILLEY SEED CO.**

SALISBURY 3, MARYLAND

ONE OF AMERICA'S DEPENDABLE SEED GROWERS

### DEPENDABLE, SAFE, LOW COST PLASTIC GREENHOUSE HEATERS



LP or Natural Gas

55,000 or 33,000 BTU input  
Rugged construction (aluminumized steel) (no rust)  
100% safety pilot-automatic control  
Directional heat flow  
Blower attachment available  
Being used with outstanding results  
Free greenhouse plans sent on request



Blower Attachment



WRITE

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### TESTS SOIL IN SECONDS!



### INCREASE YOUR CROP YIELD—

with low-cost portable  
KELWAY SOIL TESTER . . .

easy-to-use, easy-to-read. No complicated chemicals, no time consuming tests. This revolutionary, scientific device gives immediate, accurate acidity and moisture readings. Used by farmers, agriculturists, nurserymen. Fully guaranteed! Price—only \$29.50, complete with handy carrying case, pays for itself many times over in one season. Send to:

**KEL INSTRUMENTS CO., Inc.**

Dept. VG16 P. O. Box 744  
New Brunswick, New Jersey

marketing, but implied that they are not following the advice of their research men in the field of packaging and handling. He accused the growers and shippers of adhering to "bushel basket" methods instead of making more use of some of the better methods developed the past 10 years.

The simple and easy way to sell the housewife is by packaging produce with recipes in or on the package, he said. And the grower should do this himself instead of depending upon the terminal packer or retail merchant.

Ruth also advised the growers to employ fieldmen for the purpose of checking and reporting upon the quality of their merchandise at the consumer level.

FFVA officers re-elected to serve another year were J. P. Harlee, Jr., Palmetto, president; Roy Vandegrift, Jr., Pahokee, vice-president; and Joffre C. David, Orlando, secretary-treasurer.

### SLUMBERING GIANT

(Continued from page 11)

either green or vine-ripened tomatoes for 1½ to 2 cents per pound.

All vine-ripened tomatoes are shipped by refrigerated truck. They may be unloaded at Nogales, Ariz. A truck can make delivery from Culiacan to Denver or Los Angeles in 48 hours and the cost of shipment is \$1000. The average load is 1200 two-layer flats, weighing about 24 pounds net. Vine-ripened tomatoes have been shipped as far east as Detroit, but most have been marketed from Kansas City and Chicago, west, and in western Canada.

By far the greatest need of the Mexican grower is for cash to buy equipment and lease land. Mexican laws limit ownership to 494 acres per individual but leasing is permitted and has resulted in the dwindling of small operations. Most vegetable production now is concentrated on large ranches which grow from 200 to 1200 acres of vegetables.

United States money has been moving cautiously into Mexican vegetable production but reliable reports indicate there is growing investment interest with a sizable chunk of cash being put up by Florida producers hedging on their own deals. It is now estimated that about 25% of Mexican vegetable financing comes from the United States.

The American investor in Mexican vegetable production probably does best in partnership with a Mexican producer. Most of these are efficient operators insofar as conditions allow and they follow sound cultural practices. Many of them have attended schools in the United States and they send their sons to



# HARVEST EARLY PROTECT LATE

## THE FIRST ECONOMICAL AND PRACTICAL DO-IT-YOURSELF POLYETHYLENE GREENHOUSE PORTA-GREENS

Features double wall polyethylene insulating space. The one inch air space is made when the polyethylene sleeve is stretched over the tubular framework. Keeps cold out and moisture condensation at a minimum.

Light weight—Each curved section 11 feet wide, five feet long and three and a half feet high can be handled by one man. Two men in a day can cover an area 400 feet long, 11 feet wide.

Low in cost — PORTA-GREENS increase your vegetable crop value as high as 300%. Gets your crop to market earlier and protects in the fall — extending your selling season.

After use the units are easily stored nested on top of each other protecting themselves for your use the next year.



### PERMA GREEN

Also made as a semi-permanent structure — 22 feet long, the PERMA GREEN unit is easily constructed. The curved sections with a span of 22 feet, a height of 9 feet and width of 5 feet are mounted on either single staked plank tie downs or poured concrete or block foundations. The feet of the sections are anchored simply to the foundation. Double walls of polyethylene save heating costs and ventilation is more effective.



*Dealer Inquiries Invited!*

## GROWERS EQUIPMENT CO.

Growers Equipment Co.  
P.O. Box 7491  
Parma 30, Ohio

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## Seedless WATERMELON

**TRI-X #317** Ideal for the market grower. Convincing proof comes from the praise we receive from growers who tell us of the superb quality, high yield with brisk demand at good prices.


**TRI-X #313** We recommend this hybrid for the Commercial Grower because of its excellent shipping qualities. Tough rind, disease resistant. Same fine texture and taste as #317.

*We suggest that you try one or both of these true hybrid seeds this year. Find out for yourself how they will perform for you . . . in growing and selling.*

**At your seed dealer's or write**  
**American Seedless Watermelon Seed Corp.**  
 Goshen, Indiana

Pioneers  
in Seedless  
Culture  
in U.S.A.

## CENTURY SELF-PROPELLED SPRAYERS



**Protect All Crops All Season**

For top profits, vegetable crops need to be often sprayed for weeds and insects. Century's self-propelled sprayer gets the job done accurately, quickly, and easily. It also applies liquid fertilizer at rates up to 12 acres an hour. You can also earn \$2 per acre or more by doing custom work. Attachments include sprayer, duster, seeder, topper and granular applicator. Write today for free 20-page booklet to:

**CENTURY ENGINEERING CORP., CEDAR RAPIDS, IOWA. Dept. 117-C**

### FOR GREATER PROFITS PLANT RISPENS ONION SEEDS

<p><b>SET SEED VARIETIES</b></p> <p>Yellow Ebenezer White Ebenezer Golden Globe</p>	<p><b>BUNCHING VARIETIES</b></p> <p>Southport White Globe White Sweet Spanish Lisbon White Bunch</p>
<p><b>STORAGE VARIETIES</b></p> <p>Abundance Hybrid      Early Yellow Globe Rispen Downing Yellow Globe</p>	
<p><b>MARTIN RISPENS &amp; SON SEEDS</b></p>	
LANSING	ILLINOIS
<p>SEND FOR OUR FREE 1961 MARKET GROWERS CATALOG</p>	

agricultural courses in California and Arizona.

They face the persistent problem of a shortage of trained mechanics in their desire to mechanize extensively and they have not been overly successful in training farm hands in modern farm techniques. One apparent reason for the slowness of the Mexican peon to acquire modern farm skills is the unattractive wages he is paid. Farm wages are as low as 80 cents a day and no Mexican wage scale comes close to the pay the braceros get when they work on American farms.

The soil, the available land, and the water supply are no problems in the tomato country around Sinaloa but the yield per acre—about 12 tons at best—is no better than that of Florida. Actually, there is a close kinship between Mexican and Florida production. West coast tomatoes are all grown under irrigation and the varieties grown in Florida are best adapted to Mexico's west coast. Principal varieties grown in Sinaloa are Manalucie and Homestead. In Sonora, some Marglobe are grown but Sonora production is dwindling because of too frequent crop losses from frost.

There are 35,000 productive acres around Sinaloa of which about



Courtesy: USDA

**THE SILENT CO-PILOT**  
 Engineer Louis A. Liljedahl of USDA-ARS demonstrates his automatic pilot for use with power steering. Lightweight feelers of automatic pilot sense position of crop row to be cultivated, making possible precision cultivation.

10,000 acres are of staked tomatoes which are of better quality and produce about four times the volume as ground tomatoes. No more than half of total production, however, meets imports standards established under the U.S. Agricultural Marketing Agreement but this may be due to great extent to rough handling in transport from field to central packing shed and slipshod treatment at the packing center.

West coast growers are fairly well

**AMERICAN VEGETABLE GROWER**

organized under the *Confederacion de Asociaciones Agricolas del Estado de Sinaloa* which is a combination of a number of small local associations. The overall agency possesses considerable policing authority which includes the power to establish export size and grade standards with the deliberate intent of developing a reputation for top quality produce. The association has some powerful punitive weapons in its hands—the power to cut off irrigation water, to levy heavy fines, and to cancel export licenses.

Tomatoes are not the only Mexican export crop for the U.S. fresh market although they do account for three-fourths of all vegetable plantings. Other principal export crops are cantaloupes, watermelons, and peas. Also on the export list are bell peppers, pole beans, squash, cucumbers, eggplant, and sweet corn.

Mexican tomatoes are marketed from December to June and peak shipments occur generally from January to March although a push is on to extend this shipment period into May.

Both capital investment and production financing are of vital concern to Mexican growers. They import most of their machinery, seed, insecticides, fungicides, and fertilizer from the United States, and they have a strong inclination to import American dollars.

Mexican growers have a tendency to share risks in both production and marketing. They prefer to ship f.o.b. Nogales. The usual procedure is for the grower to pay all charges for crossing the border, including the U.S. duty, and for the buyer to pay the freight from the Mexican shipping point to the terminal market. Major importers, including buyers for American chain stores, have headquarters at Nogales.

**Expansion of Mexican** fresh vegetable production probably is dependent upon numerous factors—continued prosperity in the United States, improved conditions in Mexico itself, a less cautious approach by both Mexican growers and outside investors to the risk factors of production and marketing, more efficiency in production, improvement in product quality, some guarantees of a fair division of profits among investor, producer, and distributor, and training of workers in modern farm techniques.

But one thing is certain—the fertile land is ready when the grower gets around to using it. **THE END.**

Construction details for Cornell University plastic panel greenhouse, names of suppliers of materials, films, and adhesives for plastics, and reprints of current articles on plastic greenhouses are available from **AMERICAN VEGETABLE GROWER**, Willoughby, Ohio, for 50 cents a set.

# ONE TIME JACK POTS

BETTER,  
STURDIER, PEAT POTS

Made from the finest horticultural peat moss with nutrients added which are released slowly to insure sturdy, healthy growth.



SHAPE HOLDING PEAT POTS

	4 inches	500 to 4,500	cs.	Standard	Wt.	Azalea	Wt.
		5,000 to 12,000	500	\$29.75M	32 #	\$29.75M	32 #
				\$27.75M			
• 3 inches	1,000 to 9,000	1,000	Square		37 #	Round	25 #
	10,000 to 24,000			\$18.90M		\$18.90M	
• 2 1/2 inches	2,000 to 28,000	2,000	Square		36 #	Round	29 #
	30,000 to 72,000			\$16.80M		\$16.80M	
• 1 1/2 inches	2,500 to 27,500	2,500	Square		28 #		
	30,000 to 72,500			\$7.20M		\$6.70M	

NEW!!! Lower Cost THINLINE

● 3 inches			Square		Round
1,000 to 9,000	1,000	\$15.50M	34 #	\$13.30	
10,000 to 24,000		\$14.50M		\$12.30	
● 2 1/2 inches			Square		Round
2,500 to 27,500	2,500	\$8.10M	32 #	\$7.50	
30,000 to 72,500		\$7.60M		\$7.00	

PRICES PREPAID on 150 Pounds or more anywhere within U. S. A., excluding Alaska

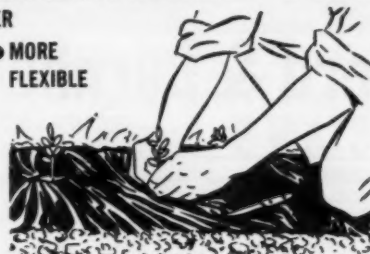
"Write for prices on carton of 100 pots and for quantity prices on regular packs".

*VisQueen*

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3' x 1,000'	.0015 Gauge Black Only	\$12.87
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5' x 1,000'	.0015 Gauge Clear	21.45
4'2" x 200'	.002 Gauge Clear	4.76
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3' x 100'	.004 Gauge Clear	13.79
10' x 100'	.004 Gauge Black and Clear	11.43
20' x 100'	.004 Gauge Black and Clear	22.86
32' x 100'	.004 Gauge Black and Clear	36.58
40' x 100'	.004 Gauge Black and Clear	45.72
1' x 300'	.006 Gauge Black Only	5.14
10' x 100'	.006 Gauge Black and Clear	17.14
16' x 100'	.006 Gauge Black and Clear	27.42
32' x 100'	.006 Gauge Black and Clear	54.85
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20' x 100'	.008 Gauge Black and Clear	45.72



A few uses are: Mulching plants; green-houses; cold frames; fumigating soil; covers for silage pits, hay stacks, machinery, equipment, supplies; enclose work areas; vapor and moisture seal in building construction and cement work; flashing.

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**WINPOWER Agrotiller**  
Adds years to your soil. Extra dollars to your Profits!

ROTARY TILLAGE BLAZES NEW TRAIL IN FARMING • HEAVY-DUTY TILLAGE TOOL BOOSTS FERTILITY AND YIELDS • RETARDS SOIL EROSION • CUTS CULTIVATION TIME •

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Winpower Mfg. Co., Newton, Iowa

**ELLIS AUTOMATIC TRANSPLANTERS**

Model 450

The latest Development in Planting Perfection

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- Cup Shaped Finger that hold the plants straight and upright. No pulling or side pressure on plants.
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- Adjustable side bars, for exact packing pressure desired.

For Free Literature write  
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Plastic Users Choice!

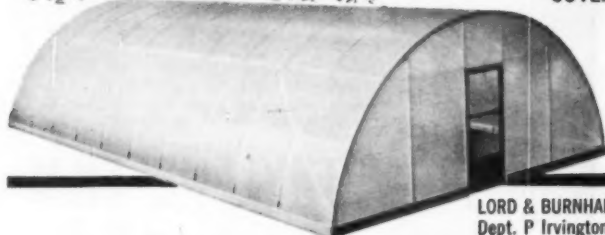
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**THE PLASTIC  
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Lengths available in Multi-  
ples of 8 Ft. ... from  
32 Ft.

**SIMPLE CLAMP-ON  
CLAMP-OFF METHOD OF  
COVER APPLICATION**



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vegetable grower

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Annual Descriptive Catalog*

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Box 150A, Rocky Ford, Colorado

## GREENHOUSE CROPS

### Let's Stagger Planting!

**T**HE theory of correlating production to marketing is founded on the premise that consumption of a product is fairly stable. This assumption is based on the fact that chain stores are now following a policy of stable pricing. If a chain can move a good quantity of an item at 39 cents per pound, they will often maintain this same retail price regardless of the wholesale price.

Since this assumption is at least partially correct, we can assume that the reason for a low wholesale price must be overproduction at a given time.

**To try to solve** this problem of overproduction we must do the following:

Have a supply of the product at all times.

Have an equal volume of the product at all times.

This, of course, would be perfect—but impossible to achieve. But we can approach this point to a much greater degree than we have in the past.

A careful study of lettuce production reveals that during the same periods of the year, it takes about the same length of time to produce the same number of baskets.

If, in the fall, we can grow a mature crop in five weeks and get an average yield of 3500 baskets per acre, we are growing 700 baskets per week per acre. If you have 4 acres planted you will have to sell 2800 baskets of lettuce per week.

In order to maintain this same volume in the winter when it takes 10 weeks to grow 2500 baskets per acre (250 baskets per week), you would need to plant 11½ acres.

The standard practice is to grow one or two crops of lettuce in the fall. So you can readily see production will be very unstable. It takes only 1% oversupply to create a glutted market and 1% undersupply to create a scarce market. Our most important job is to try to stabilize our production.

Because tomatoes ripen a cluster at a time, we at least, with this crop, have some continuity of supply. But growers can improve this continuity.

**How many times** have you planted a tomato crop and found that you got your heaviest picking on the same date after planting? If you have never checked this, you would be surprised at the regularity of the

crop in maturing. If a tomato crop has a peak time of production, why not stagger the peaks? This can be done by scheduled planting.

In our three greenhouses we start sowing seed November 1 and sow every week at one or the other of the greenhouses, in about equal volume, until February 15. We have found that the plant that was sowed first, peaks first, then slowly decreases in production.

In the production of tomatoes it is a well established fact that the best quality is produced on the first six or eight clusters. Therefore, if the production is staggered the customers who will pay for quality will have a longer supply and the grower will be able to hold his high quality trade.

The more adept we get at staggering production, the easier our selling job will become and the more effective our promotion will become. In dealing with a chain store it is imperative to know in advance of an oversupply in order to stimulate sales. And it is equally important to

## Answer to YOU be the EXPERT!

(See page 34)

It was the wood preservative. Creosote and most phenolic compounds are excellent for treating posts and building supports. But they are toxic to plants, especially inside greenhouses. Notice how poorly the weeds grow close to posts treated with these materials.

Greenhouse wood, including benches and flats, should be treated with non-toxic wood preservatives such as those containing copper naphthenate. Although more costly, they are worth the price.

know when a shortage may occur in order to avoid overpromotion.

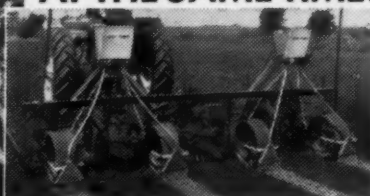
Our greatest source of additional income can be derived by an increase in price. If a grower who produces 15,000 baskets per acre could increase his average net return only one cent per pound he would make an additional \$1200 per acre. Staggered production may be the means of achieving this increase.—Richard Pretzer, Rutenik Gardens, Cleveland, Ohio.

Working drawings for an attractive, easy-to-build roadside stand are available for \$2.00 from AMERICAN VEGETABLE GROWER, Willoughby, Ohio.



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GRANULAR CHEMICAL  
ROW CROP APPLICATOR  
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**INCREASES SOIL PRODUCTION  
2 WAYS!**



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Can increase plant productivity up to 33%. Retains moisture and nutrients for the plants — not the weeds.

**2 KILLS SOIL INSECTS**

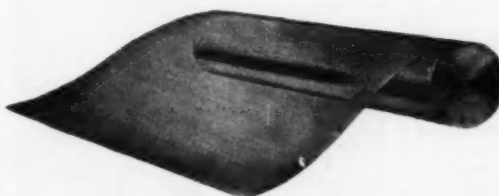
Stops insect injury to plant root structure that cuts crop profits.

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**EZEE-FLOW**

Division of AVCO DISTRIBUTING CORP.  
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BLACK MULCHING GRADE**

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.0015"—3 ft. x 500 ft., \$7.50 a roll, net  
.0015"—3 ft. x 1,000 ft., \$13.92 a roll, net  
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"We ship same day"

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\$12.00 a roll  
8 ft. wide by 100 ft. long  
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10½ ft. wide by 100 ft. long  
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20 ft. wide by 100 ft. long  
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6 Rolls to 9 Rolls  
Deduct 20%  
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Big useable sample piece 10 ft. long by 3 ft. wide. Send \$1.00 cash, check or stamps for this big sample by mail, postpaid

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650 x 20	8 Ply	12.00	
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## Will It Topple?

THERE'S a growing development within the tomatoes-for-processing industry that may cause changes as dramatic as those reported in "The Big Shift," page 26. For the last two decades production in the East and Midwest has declined sharply, with a resulting increase of production in the West. And California has become the undisputed king of the industry.

But, like Humpty Dumpty, will California topple? A look at tomato production in the various states in 1959 and 1960 may be cause for concern among California growers. While California's average yield per acre has held steady at approximately 16 tons, yields in Ohio, New Jersey, and Illinois have increased.

Ohio's average yield in 1960 was 17.7 tons, compared to 9.8 tons in 1949-58. Not only did the Buckeye state top California in yield but in

average price per ton, \$27.80 to \$23. New Jersey's average yield was 15.8, with an average price per ton of \$31.90.

No longer is it unusual for growers in southern Ohio and northern Michigan to record yields of 20 tons or more. For example, Emidio DeSilvio, New Jersey's top grower last year, had an average yield of 34.53 tons per acre.

No one can be certain how these changes will affect the processing tomato industry. But it seems likely that acreage in the East and Midwest will be increased. The Midwest, particularly, is an advantageous geographic location. Centered in an area of heavy population, its shorter shipping distance to market may hold great appeal to processors who shifted much of their activity to the West Coast.

## Prevention Is the Cure

DO you like to gamble with Lady Luck? The cucumber grower who had to plow up his crop because it was infected with anthracnose will tell you it doesn't pay. If he had treated his seed with bichloride of mercury before he planted it, he would have eliminated the principal source of inoculation and reduced the danger of a serious infection.

An old sage once said, "Prevention is the cure." This is particularly true of seed treatment. Different kinds of seed treatment will help to prevent damping-off, seed decay, and diseases such as angular leaf spot of cucumber and bacterial spot of pepper.

Soil testing is another preventive practice sometimes overlooked by growers. It is easy to take samples and have them tested, yet many times this important practice is forgotten or ignored. Later, when minor element deficiencies show up or the pH proves to be off, it may be too late to prevent severe crop injury and subsequent loss.

Soil fumigation is a prevention too often neglected. Chemical soil fumigation, though moderately expensive to start with, is soon paid

for in superior crop production. It may also be the *only* alternative in the battle of the nematodes—either fumigation or no crop at all.

Other methods of fumigation will destroy most weed seeds, diseases, insects, and nematodes, leaving a clean soil in which seedlings will thrive. Failure to fumigate often

means failure of the crop because as the old sage said, prevention is the cure.

Soil treatments for the control of insects are practical because the insecticides remain in the soil for long periods of time. Some growers apply them in the fertilizer that they broadcast before planting. Insecticides used in this way will often prevent attacks of wire worms, mole crickets, bill bugs, and other serious insect pests.

A good irrigation system is an important prevention. There are few

### QUOTE-OF-THE-MONTH

"An onion can make people cry, but there has never been a vegetable invented to make them laugh."

—Unknown.

areas where irrigation is not needed at least once or twice during the growing season. Water applied at the right time will often double crop yields and improve quality.

Yet, all these preventive measures are of no avail if the grower doesn't buy good strains of varieties from reliable seedsmen.

J. M. Jenkins, Jr., horticulturist in charge at Horticultural Crops Research Station at Castle Hayne, N. C., has prepared the following checklist to help growers in getting off to a good start in 1961:

- Test soil and apply needed materials such as lime or phosphate. Supply minor elements if they are needed.
- Fumigate plant beds for disease, weeds, and insects. Fumigate fields that are infested with nematodes. Apply insecticides to kill wire worms, bill bugs, mole crickets, etc.
- Buy seed from a reliable company and get the best.
- Treat the seed according to recommendations of your experiment station or county agent.
- If you don't have irrigation, look into the possibility of getting it.

### Coming Next Month

- The Fabulous Story of Tuttle's Red Barn
- How the Westsokes of New Jersey Combine Onion and Plant Growing
- Direct Seeding Cabbage and Broccoli in New York
- Texas Growers Are Transplanting Watermelons for Earliness

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